

ARIDE

Advanced Roadside Impaired Driving Enforcement

PARTICIPANT GUIDE



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, ARIDE) curricula.

Kyle Clark, International Association of Chiefs of Police

Don Decker, Nahant MA Police Department

Chuck Hayes, International Association of Chiefs of Police

Jim Maisano, International Association of Chiefs of Police

Don Marose, Minnesota Highway Patrol (Retired)

Matthew Payne, Kansas Highway Patrol

Timothy Plummer, Oregon State Police

Christine Frank, U.S. Department of Transportation, National Highway Traffic Safety Administration

Pam McCaskill, U.S. Department of Transportation, Transportation Safety Institute

Lance McWhorter, U.S. Department of Transportation, Transportation Safety Institute

Rocky Wehling, U.S. Department of Transportation, Transportation Safety Institute

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

PREFACE

The ARIDE training curriculum prepares police officers and other qualified persons to conduct various drug-impairment detection tests at roadside for use in drugged-driving investigations. This training, developed under the auspices and direction of NHTSA and IACP, has experienced increasing interest and success since its inception in 2009.

As in any educational training program, an instructor 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 sources in health care science, toxicology, jurisprudence, optometry, 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 ARIDE curriculum. The reorganized manuals are then prepared and disseminated, both domestically and internationally. Changes will take effect after approval by TAP, unless otherwise specified or when so designated.

The procedures outlined in this manual describe how the various roadside tests are to be administered under ideal conditions. We recognize that the tests used in this training will not always be administered under ideal conditions in the field because such conditions do not always exist. Even when administered under less than ideal conditions, they will generally serve as valid and useful indicators of impairment. Slight variations from the ideal, i.e., the inability to find a perfectly smooth surface at roadside, may have some effect on the evidentiary weight given to the results; however, this does not necessarily make the tests learned in this training invalid.

1

ARIDE

INTRODUCTION AND OVERVIEW “DRUGS AND HIGHWAY SAFETY”

LEARNING OBJECTIVES

- Explain the goals and objectives of this training
- Identify the elements of the drug problem
- Define and describe impaired driving enforcement programs
- Understand the roles and responsibilities of the Drug Recognition Expert (DRE) and how this training supports the Drug Evaluation and Classification (DEC) Program
- Define the term drug in the context of traffic safety and impaired driving enforcement as referenced in the DEC Program

CONTENTS

A. Welcoming Remarks and Introductions	3
B. Housekeeping	3
C. Participant Introductions.....	4
D. ARIDE Pre-Training Exam.....	4
E. Training Goal.....	5
F. What is a Drug?.....	10
G. Statistics and Research.....	11
H. Impaired Driving Enforcement Programs.....	15
I. Roles and Responsibilities of a DRE	18

LEARNING ACTIVITIES

- Instructor-Led Presentation

Session 1 – Introduction and Overview “Drugs and Highway Safety”



Session 1

Introduction and Overview

“Drugs and Highway Safety”



ARIDE

Slide 1.

Session 1 – Introduction and Overview “Drugs and Highway Safety”

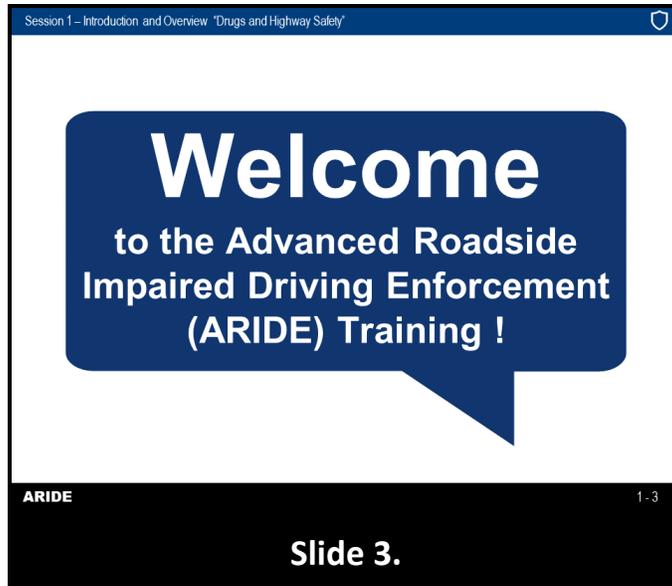
Learning Objectives

- Explain goals and objectives of training
- Identify elements of drug problem
- Define and describe impaired driving enforcement programs
- Understand roles and responsibilities of DRE and how training supports DEC Program
- Define term drug in context of traffic safety and impaired driving enforcement as referenced in DEC Program

ARIDE 1-2

Slide 2.

A. Welcoming Remarks and Introductions



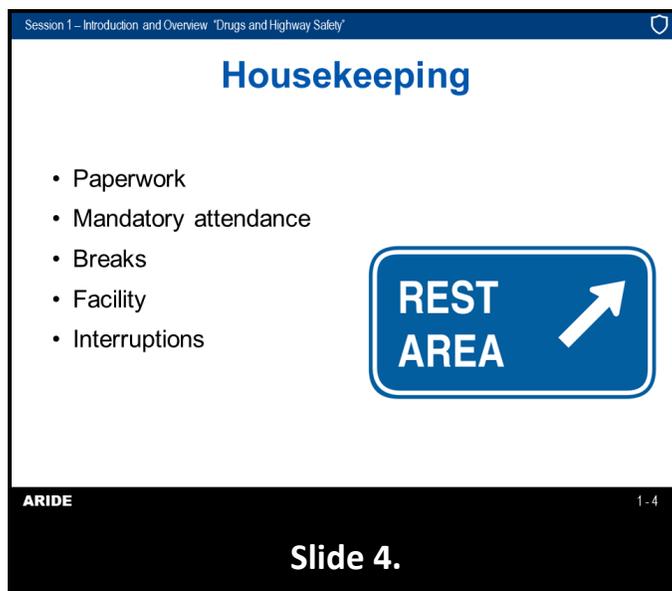
Session 1 – Introduction and Overview "Drugs and Highway Safety"

Welcome
to the Advanced Roadside
Impaired Driving Enforcement
(ARIDE) Training !

ARIDE 1-3

Slide 3.

B. Housekeeping



Session 1 – Introduction and Overview "Drugs and Highway Safety"

Housekeeping

- Paperwork
- Mandatory attendance
- Breaks
- Facility
- Interruptions

REST AREA 

ARIDE 1-4

Slide 4.

C. Participant Introductions

Session 1 – Introduction and Overview "Drugs and Highway Safety" 

Participant Introductions

- Name
- Agency affiliation
- Experience



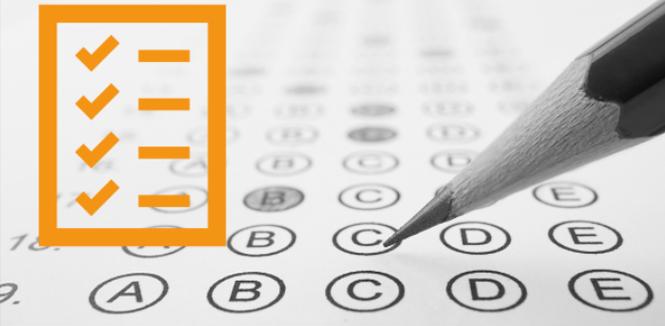
ARIDE 1-5

Slide 5.

D. ARIDE Pre-Training Exam

Session 1 – Introduction and Overview "Drugs and Highway Safety" 

ARIDE Pre-Training Exam

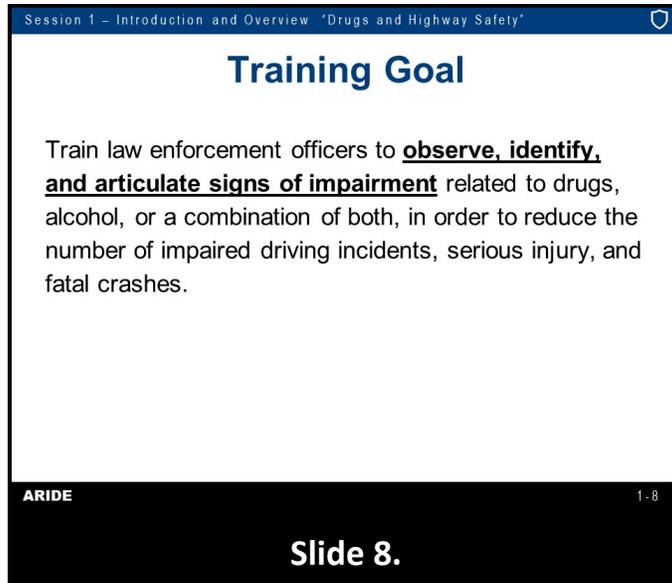


ARIDE 1-6

Slide 6.



E. Training Goal



The goal of ARIDE is to train law enforcement officers to observe, identify, and articulate the signs of impairment related to drugs, alcohol, or a combination of both, in order to reduce the number of impaired driving incidents, serious injury, and fatal crashes. This training will help other criminal justice professionals (prosecutors, toxicologists, etc.) to understand the signs of impairment related to drugs, alcohol, or a combination of both, and effectively work with law enforcement in order to reduce the number of impaired driving incidents, serious injury, and fatal crashes.

Session 1 – Introduction and Overview “Drugs and Highway Safety”

Training Objectives

- Properly administer and articulate SFSTs
- Describe relationship of drugs to impaired driving incidents
- Observe, identify, and articulate observable signs of drug impairment

ARIDE 1-9

Slide 9.

Session 1 – Introduction and Overview “Drugs and Highway Safety”

Training Objectives

- Identify, document, and describe indicators observed and information obtained related to impairment which leads to arrest/release decision
- Articulate, through testimony, impairment related to alcohol, drugs, or a combination of both based on a complete investigation

ARIDE 1-10

Slide 10.

In order to meet these goals, participants will learn to:

- Demonstrate, articulate, and properly administer the Standardized Field Sobriety Tests (SFSTs) proficiently.
- Define and describe the relationship of drugs to impaired driving incidents.
- Observe, identify, and articulate the observable signs of drug impairment with the established seven drug categories associated with the DEC Program.
- Identify, document, and describe indicators observed and information obtained related to impairment which leads to the arrest/release decision.
- Articulate, through testimony, impairment related to alcohol, drugs, or a combination of both based on a complete investigation.

This training is divided into sessions, which are designed to provide the participant with an overview of drug-impaired driving.

Session 1 – Introduction and Overview “Drugs and Highway Safety”

Training Sessions

1. Introduction and Overview “Drugs and Highway Safety”
2. Standardized Field Sobriety Testing Review
3. Standardized Field Sobriety Testing Proficiency Examination
4. Drugs in the Human Body
5. Observation of the Eyes and Additional Tests for Drug Impairment
6. Seven Drug Categories
7. The Effects of Drug Combinations
8. Pre and Post Arrest Procedures
9. Written Examination and Program Conclusion

ARIDE 1-11

Slide 11.

1. Introduction and Overview “Drugs and Highway Safety”
2. Standardized Field Sobriety Testing Review
3. Standardized Field Sobriety Testing Proficiency Examination
4. Drugs in the Human Body
5. Observation of the Eyes and Additional Tests for Drug Impairment
6. Seven Drug Categories
7. The Effects of Drug Combinations
8. Pre and Post Arrest Procedures
9. Written Examination and Program Conclusion

The training is designed to serve as a bridge between SFST and DRE.

Session 1 – Introduction and Overview “Drugs and Highway Safety”

ARIDE Prerequisites

- SFSTs review and update
- Pass SFST proficiency evaluation

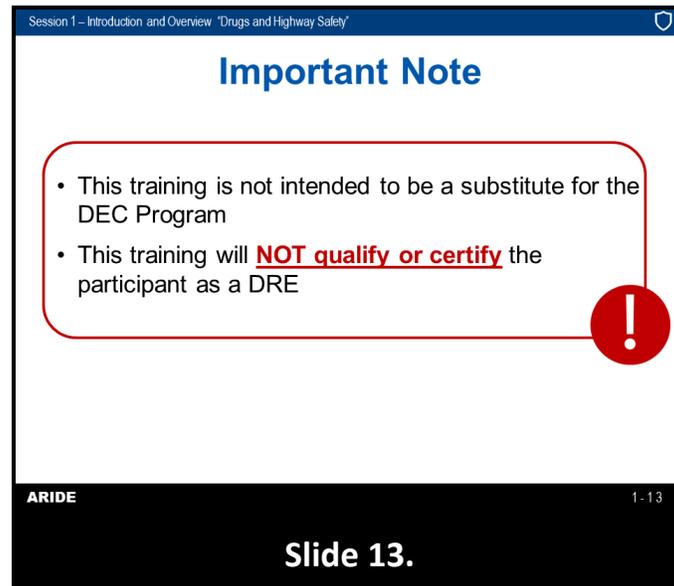


ARIDE 1-12

Slide 12.

In order for the participant to utilize the information presented in this training, the following is required:

1. The participant will receive a short review and update for the SFSTs as part of Session 2 of this training.
2. After completing Session 2, the participant will be required to pass a SFST proficiency evaluation.
3. Failure to successfully complete the SFST proficiency will result in dismissal from the training.



Session 1 – Introduction and Overview "Drugs and Highway Safety"

Important Note

- This training is not intended to be a substitute for the DEC Program
- This training will **NOT qualify or certify** the participant as a DRE

ARIDE 1-13

Slide 13.

Many law enforcement officers are trained in Standardized Field Sobriety Testing (SFST) and use the skills gained in the training as part of their overall enforcement of Driving While Impaired (DWI) laws.

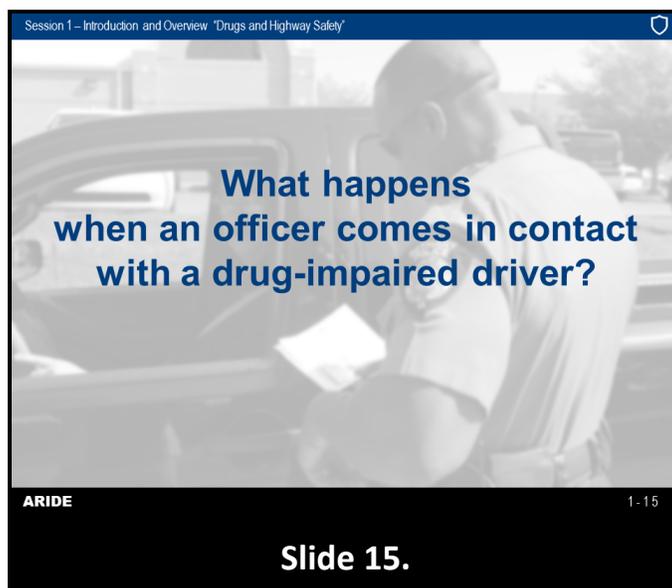
This training is not developed to act as a substitute for the DEC Program and will not qualify or certify an individual as a DRE.

This training is intended to bridge the gap between the SFST and DRE training and to provide a level of awareness to the participants, both law enforcement and other criminal justice professionals, in the area of drug impairment in the context of traffic safety.



The National Highway Traffic Safety Administration (NHTSA) continues to support high visibility enforcement efforts among law enforcement agencies. As a result of this effort, several things happened: Prosecutors were left behind in technology advances and training; The criminal court system was overloaded; and, Delivery of poorly developed cases for prosecution.

Criminal justice professionals such as prosecutors, toxicologists, and probation and parole officers must also understand the DWI detection process in order to support enforcement efforts, which will increase the probability of successful prosecution and adjudication.



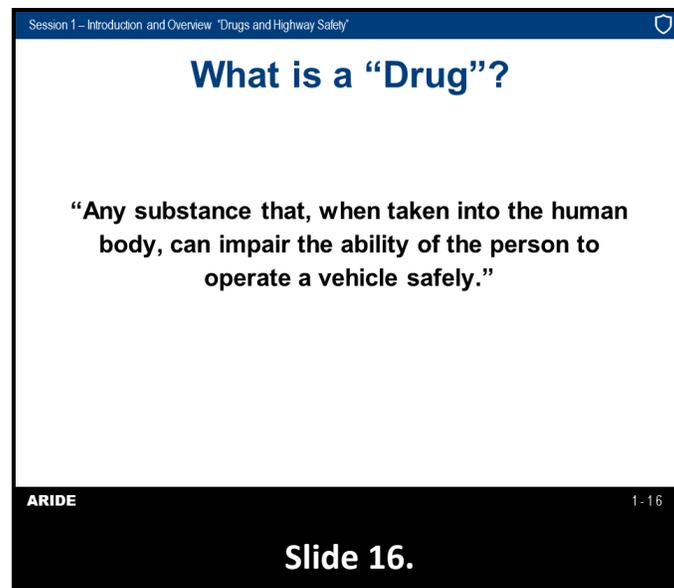
Often officers come in contact with a drug-impaired driver. There are many things that could be happening.

The officer:

- Is unfamiliar with the indicators of drug impairment, therefore does nothing with the driver.

- Recognizes there is something wrong with the driver, but does not know how to address the issue.
 - Allows the driver to continue on their way.
 - Allows the driver to ride home with another individual.
 - Is not familiar with the resources available to them.
 - Recognizes indicators of impairment and arrests the driver for DWI.
-

F. What is a Drug?



Session 1 – Introduction and Overview “Drugs and Highway Safety”

What is a “Drug”?

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

ARIDE 1-16

Slide 16.

A Simple, Enforcement-Oriented Definition of Drugs: “Any substance that, when taken into the human body, can impair the ability of the person to operate a vehicle safely.” This working definition is derived from the 1985 California Vehicle Code.

This definition includes some substances physicians don't usually think of as drugs.

Within this simple, enforcement-oriented definition, there are seven categories of drugs. Each category consists of substances that can 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.

G. Statistics and Research

Session 1 – Introduction and Overview | Drugs and Highway Safety

2020 National Survey Drug Use and Health (NSDUH)

- Slightly less than half of Americans consider themselves drinkers
- 6.4% describe themselves as heavy drinkers
- 37.3 million people used illicit drugs in the past month

ARIDE 1-17

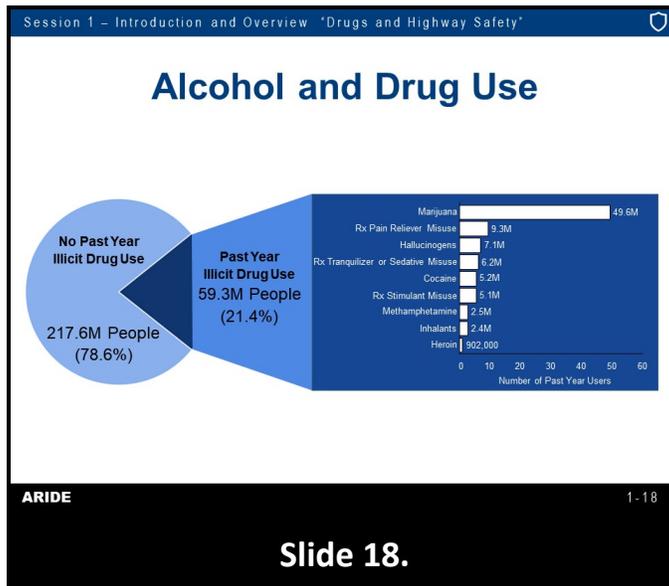
Slide 17.

Alcohol and Drug Use: Social drinking is considered acceptable in many societies. It is important to understand the use of alcohol in the context of society since it is related to the enforcement and adjudication of DWI offenses. The 2020 National Survey on Drug Use and Health (NSDUH) reports that slightly less than half of Americans, 138.5 million people, consider themselves drinkers, 17.7 million people describe themselves as heavy drinkers (consuming 15 drinks or more per week), 37.3 million people or 13.5% of the population used illicit drugs in the past month, and Marijuana was used by approximately 88 percent of all current illicit drug users.

Although these statistics are significant, it is reasonable to assume the problem is even larger when considering legal or prescription drugs used in a manner other than for what they have been prescribed or produced. When looking at drug use specifically, it is helpful to see the trends based on specific types of drugs.

Source:

Substance Abuse and Mental Health Services Administration. (2021). *Key Substance Use and Mental Health Indicators in the United States: Results from the 2020 National Survey on Drug Use and Health*. (HHS Publication No. PEP21-07-01-003, NSDUH Series H-56). Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. Retrieved from <https://www.samhsa.gov/data/>



The National Survey on Drug Use and Health (NSDUH) provides additional details on drugs used within the past 30 days in a manner other than prescription:

Type	Number of Users
Cocaine	1.8 Million
Hallucinogens	1.8 Million
Psychotherapeutics	16.8 Million
Pain Relievers	2.5 Million
Tranquilizers	2.2 Million
Stimulants	1.5 Million
Sedatives	2.2 Million

Source:

Substance Abuse and Mental Health Services Administration. (2021). *Key Substance Use and Mental Health Indicators in the United States: Results from the 2020 National Survey on Drug Use and Health*. (HHS Publication No. PEP21-07-01-003, NSDUH Series H-56). Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. Retrieved from <https://www.samhsa.gov/data/>

Session 1 – Introduction and Overview “Drugs and Highway Safety”

Driving Under the Influence

- Males are twice as likely as females to drive under the influence of alcohol
- 8.2% reported they had driven at least once in the last year under the influence of alcohol
- 11.8 million people reported they drove under the influence of illicit drugs during the last year

ARIDE 1-19

Slide 19.

It is important to understand the magnitude of the problem of driving while impaired by drugs and alcohol.

The surveys indicate that males are twice as likely as females to drive under the influence of alcohol. Overall, 8.2% of Americans reported they had driven at least once in the last year under the influence of alcohol. Approximately 11.8 million people reported they drove under the influence of illicit drugs during the last year.

Source:

Substance Abuse and Mental Health Services Administration. (2018). *Key substance use and mental health indicators in the United States: Results from the 2017 National Survey on Drug Use and Health*. (HHS Publication No. SMA 18-5068, NSDUH Series H-53). Rockville, MD:: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. Retrieved from Retrieved from <https://www.samhsa.gov/data/>

Session 1 – Introduction and Overview “Drugs and Highway Safety”

2013-2014 National Roadside Survey of Alcohol and Drug Use by Drivers

ARIDE 1-20

Slide 20.

NHTSA undertook a comprehensive survey of the prevalence of potentially impairing drug use by drivers in 2013 and 2014. Out of 11,100 drivers, 71.2 percent provided oral fluid and/or blood samples. Samples were tested for illegal drugs, prescription medicines, and over-the-counter drugs. 20% of drivers tested positive for at least one drug, up from 16.3% in the 2007 Roadside Survey. 12.6% of the drivers tested positive for THC, up from 8.6% in the 2007 Roadside Survey. 15.1% of drivers tested positive for at least one illegal drug, up from 12.4% in 2007.

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

Source:

Berning, A., Compton, R., & Wochinger, K. (2015). *Results of the 2013–2014 National Roadside Survey of Alcohol and Drug Use by Drivers*. (Traffic Safety Facts Research Note. Report No. DOT HS 812 118). Washington, DC: National Highway Traffic Safety Administration.

H. Impaired Driving Enforcement Programs



Session 1 – Introduction and Overview ‘Drugs and Highway Safety’

NHTSA/IACP-Supported Impaired Driving Programs

- **Training:** SFST; ARIDE; DEC Program; Prosecuting the Drugged Driver; ARIDE Refresher; DRE Expert Testimony
- **Enforcement:** Selective Traffic Enforcement
- **Prosecution/Judges:** Traffic Resource Prosecutors; Judicial Education

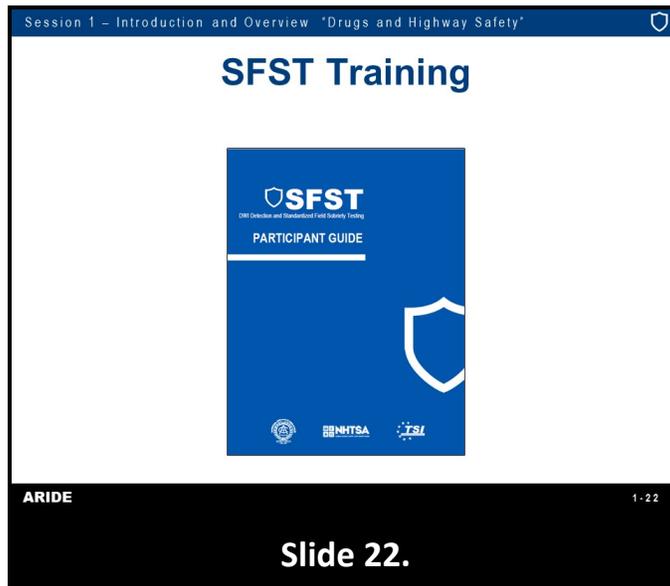
ARIDE 1-21

Slide 21.

NHTSA/IACP supports training, enforcement, prosecution, and adjudication.

One of the most critical support activities NHTSA provides is TRAINING. Some examples of law enforcement and justice professional training NHTSA provides and supports are:

- SFST
- ARIDE
- DEC Program
- Prosecuting the Drugged Driver
- ARIDE Refresher
- DRE Expert Testimony
- Lethal Weapon
- Protecting Lives, Saving Futures



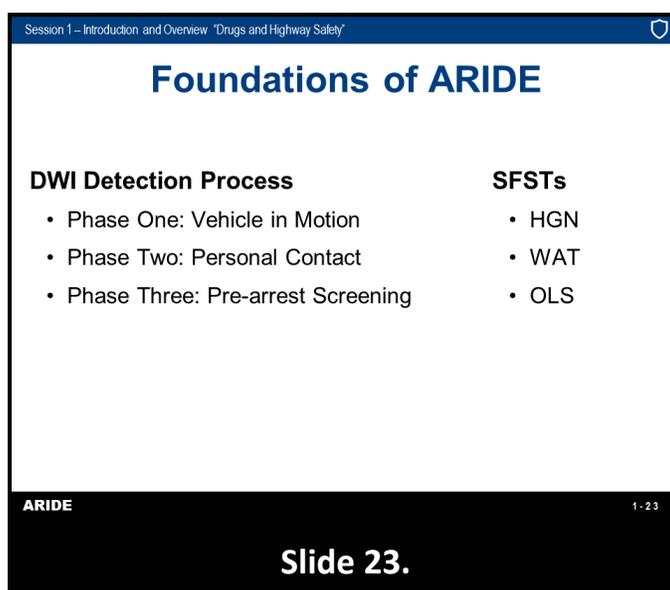
The SFST practitioner training is the cornerstone for impaired driving training and enforcement. It is the foundation for this training as well as the DEC Program, and is an integral part of all alcohol and drug-impaired driving enforcement initiatives.

DWI Detection and Standardized Field Sobriety Testing

The SFSTs are a set of tests that include the following:

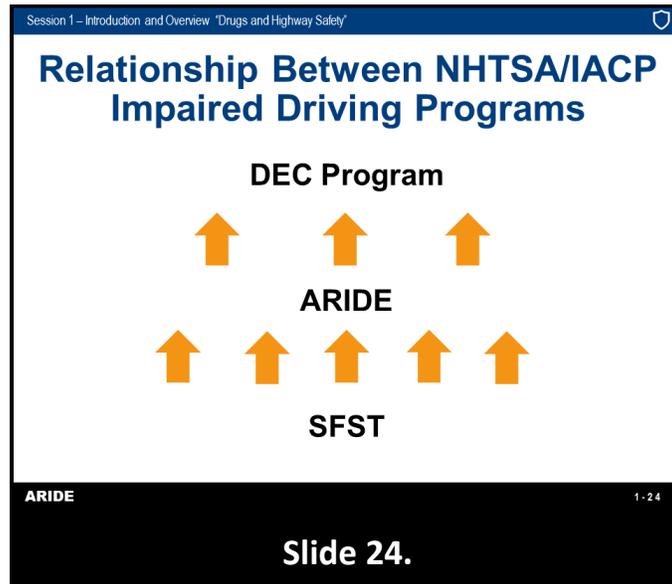
- Horizontal Gaze Nystagmus (HGN)
- Walk and Turn (WAT)
- One Leg Stand (OLS)

These tests are designed to be administered and evaluated in a standardized manner to obtain validated indicators of impairment based on NHTSA-supported research.



The SFSTs are part of the overall DWI detection process which includes three phases: (1) Vehicle in Motion; (2) Personal Contact; and, (3) Pre-arrest Screening.

The SFSTs serve as the foundation for impaired driving enforcement. It is critical these tests be performed and interpreted properly.



Drug Evaluation and Classification (DEC) Program

The ultimate goal of the DEC Program is to help prevent crashes and avoid deaths and injuries by improving enforcement of drug-impaired driving violations. A participant who successfully completes all phases of the DEC Program is known as a DRE or Drug Recognition Expert. The DRE officer is trained to conduct a detailed evaluation consisting of twelve (12) steps and obtain other evidence that can be articulated as an opinion. They can reach reasonably accurate conclusions concerning the category or categories of drug(s) or medical conditions causing the impairment observed in the subject. Based on these informed conclusions, the DRE can request the collection and analysis of an appropriate biological sample (blood, urine, or saliva) to obtain corroborative, scientific evidence of the subject's drug use.

I. Roles and Responsibilities of a DRE

Session 1 – Introduction and Overview "Drugs and Highway Safety" 

Roles and Responsibilities of a DRE



ARIDE 1-25

Slide 25.

To obtain a DRE certification the law enforcement officer must:

1. Complete 72 hours of classroom training
2. Complete field certifications
3. Pass a comprehensive final knowledge examination

In order to retain their certification, the DRE must:

1. Participate in continuing education trainings
2. Complete a recertification training every two years
3. Maintain a log of all evaluations completed in training and as part of any enforcement activities
4. Meet other administrative requirements as established in the International Association of Chiefs of Police (IACP) International Standards governing the DEC Program

The State DEC Program Coordinators may place other standards on each DRE specific to that State.



Bridging the Gap

- Build on SFST skills
- Identify drug-impaired drivers
- Support the DEC Program



ARIDE

1-26

Slide 26.

The ARIDE Training: The ARIDE training will allow the participant to build on the knowledge gained through their training and experience related to the SFSTs. Many law enforcement officers have encountered subjects who appear to be impaired by a substance other than alcohol or seem to be displaying signs and symptoms which are inconsistent with their BAC test results. This training will provide additional information which can assist in effective observation and interview techniques related to DWI by alcohol, drugs, or a combination of both and make an informed decision to arrest or not arrest a subject for impaired driving.

This training will deliver knowledge and information that will help in assessing impaired drivers at roadside. This training and subsequent field experience will demonstrate the value of having a DRE on staff in an agency and may serve as motivation for officers to attend DRE training in the future. A subsequent result of this training will facilitate better utilization of DREs in the field. A desired outcome of this training is that the participant will better understand the role of the DRE and will be able to use their expertise more effectively. For those communities with no DREs or limited access to their services, this training will help officers make informed decisions related to testing, documentation, and reporting drug-impaired driving cases.



Questions?

ARIDE

1-27

Slide 27.

ADVANCED ROADSIDE IMPAIRED DRIVING ENFORCEMENT (ARIDE)

GLOSSARY OF TERMS

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

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

ANALGESIC – A drug that relieves or allays pain.

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

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

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

ARTERY – The strong, elastic blood vessels that carry blood away 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.

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.

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.

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

CANNABIS – This is the drug category that includes marijuana. Marijuana comes from 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 Marijuana 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.

CENTRAL NERVOUS SYSTEM DEPRESSANTS – One of the seven drug categories. CNS Depressants include alcohol, barbiturates, anti-anxiety tranquilizers, and numerous other drugs.

CENTRAL NERVOUS SYSTEM STIMULANTS – One of the seven drug categories. CNS Stimulants include Cocaine, the Amphetamines, Ritalin, Desoxyn, and numerous other drugs.

CONJUNCTIVA – The clear membrane of the sclera (white portion of the eye) and lines the inside of the eyelids and is made of lymphoid tissue. Conjunctivae refers to both eyes. (Conjunctiva is singular.)

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".

CYCLIC BEHAVIOR – A manifestation of impairment due to certain drugs, in which the suspect 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.

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 vehicle safely.

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.

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.”

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.

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

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

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 – The dynamic, self-regulating process by which the body maintains a balanced or constant state 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).

HYPERGLYCEMIA – Excess sugar in the blood.

HYPERTHERMIA – Increased body temperature.

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

HYPOTHERMIA – Decreased body temperature.

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

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

INSUFFLATION – See "snorting".

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

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)

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

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

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

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

MIOSIS – Abnormally small (constricted) pupils.

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

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 and oxycodone), and the synthetic narcotics (such as fentanyls and methadone).

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.

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

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

NYSTAGMUS – An involuntary jerking of the eyes.

"ON THE NOD" – A semi-conscious state of deep relaxation. Induced by impairment due to Heroin or other Narcotic Analgesics. The subject's eyelids droop, and chin rests on the chest. Subject may appear to be asleep but can be easily aroused and may respond to questions.

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

PARANOIA – Mental disorder characterized 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.

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

PHENYL CYCLOHEXYL PIPERIDINE (PCP) – Often called "phencyclidine" or "PCP", it is a specific drug belonging to the Dissociative Anesthetics category.

PHYSIOLOGY – The branch of biology dealing with the functions and activities of life or living matter and the physical and chemical phenomena involved.

PILOERECTOR – 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.

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.

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 may 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 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).

SINSEMILLA – The unpollinated female cannabis plant, with a relatively high concentration of THC.

SNORTING – 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.

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 DWI investigations.

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.

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 the drug. As tolerance develops, the user may experience diminishing psychoactive effects from the same dose of the drug. As a result, the user may steadily increase the dose he or she takes, in an effort to achieve the same psychoactive effect.

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

VERTICAL GAZE NYSTAGMUS (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.

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.

2

ARIDE

STANDARDIZED FIELD SOBRIETY TESTING REVIEW

LEARNING OBJECTIVES

- Understand the results of selected SFST validation studies
- Define and describe the SFSTs
- Define nystagmus and distinguish between the different types
- Describe and properly administer the three SFSTs
- Recognize, document, and articulate the indicators and clues of the three SFSTs
- Identify the limitations of the three SFSTs

CONTENTS

A. Overview of the SFST Validation Studies.....	3
B. Overview of Selected Types of Nystagmus	7
C. Horizontal Gaze Nystagmus	10
D. Practice HGN	19
E. Walk and Turn (WAT) Test.....	21
F. Practice Walk and Turn.....	28
G. One Leg Stand (OLS).....	28
H. Practice One Leg Stand	36

LEARNING ACTIVITIES

- Instructor-Led Presentation and Demonstration
- Participant Practice Session



Session 2

Standardized Field Sobriety Testing (SFST) Review



ARIDE

Slide 1.



Learning Objectives

- Understand results of selected SFST validation studies
- Define and describe SFSTs
- Define nystagmus and distinguish between different types
- Describe and properly administer the three SFSTs
- Recognize, document, and articulate indicators and clues of the three SFSTs
- Identify limitations of the three SFSTs

ARIDE

2-2

Slide 2.

A. Overview of the SFST Validation Studies

Session 2 - Standardized Field Sobriety Testing Review

Overview of Original SFST Validation Studies

- California 1977 (Lab)
- California 1981 (Lab and Field)
- District of Columbia, Maryland, North Carolina, Virginia 1983 (Field)

ARIDE 2-3

Slide 3.

For many years law enforcement officers have utilized field sobriety tests to determine a subject's impairment due to alcohol. The performance of the subject on those field sobriety tests was used by the officer to develop probable cause for arrest and as evidence in court.

A wide variety of field sobriety tests were being used by officers throughout the country. There was a need to develop standardized, validated tests. NHTSA sponsored several research projects conducted through a contract with the Southern California Research Institute (SCRI). SCRI published the following three reports:

1. California 1977 (Lab)
2. California 1981 (Lab and Field)
3. District of Columbia, Maryland, North Carolina, Virginia 1983 (Field). (Primary distinction validated at 0.10 Blood Alcohol Concentration (BAC))

The following SFSTs were recommended:

- Horizontal Gaze Nystagmus (HGN)
 - Walk and Turn (WAT)
 - One Leg Stand (OLS)
-

Session 2 - Standardized Field Sobriety Testing Review

Original SCRI SFST Reliability

- HGN 77%
- WAT 68%
- OLS 65%



ARIDE 2-4

Slide 4.

SCRI analyzed the laboratory test data and determined HGN alone was 77% accurate, WAT alone was 68% accurate, and OLS alone was 65% accurate. Subsequent studies have demonstrated greater accuracy with HGN, WAT, and OLS.

Session 2 - Standardized Field Sobriety Testing Review

SFST Field Validation Studies



ARIDE 2-5

Slide 5.

Additional NHTSA supported research studies were conducted to validate the three SFSTs at 0.08 BAC. Three SFST field validation studies were: Colorado (1995), Florida (1997), and San Diego (1998). The Colorado SFST validation study was the first full field study that utilized law enforcement personnel experienced in the administration of SFSTs.

Session 2 - Standardized Field Sobriety Testing Review

Difference in Results

Conducted in field with officers experienced in DWI detection and SFSTs

- Colorado – 86%
- Florida – 95% at 0.08% BAC
- San Diego – 91% at 0.08% BAC
 - HGN “most reliable” field sobriety test

ARIDE 2-6

Slide 6.

In the Colorado study, officers made correct arrest or release decisions 86% of the time based on the three SFSTs (HGN, WAT, OLS) conducted in varying roadside and weather conditions.

The Florida study demonstrated the SFSTs were valid and reliable indicators of presence of alcohol when used under present-day traffic and law enforcement conditions. Correct decisions to arrest were made 95% of the time based on the three SFSTs (HGN, WAT, OLS).

In the San Diego study, the research was done to investigate how well the SFSTs discriminate at BACs below 0.10. Based on the revised arrest and release criteria, the officers in the study made correct decisions 91% of the time based on the three SFSTs (HGN, WAT, OLS) at the 0.08 BAC level and above.

Session 2 - Standardized Field Sobriety Testing Review

"Correct" and "Incorrect" Arrest Decisions



ARIDE 2-7

Slide 7.

To understand the results of the research studies discussed in this training, it is important to define what is meant by a correct arrest decision. A correct arrest decision is made when an officer, after completing the third phase of the detection process, decides to arrest a subject and that subject tested above the per se limit, or release a subject who is below the per se limit.

The remaining subjects (incorrect arrest decisions) fall into two other categories. Members of the first group were not arrested but tested above the per se limit for BAC. The Colorado Study noted a number (approximately 33%) of these individuals were considered alcohol tolerant and performed well on the SFSTs even though their BACs were above the per se limit. Although these release decisions were recorded as errors based on the procedures outlined in the study, this non-arrest decision ultimately benefited the driver.

For purposes of this study, the subjects who were arrested, but their BAC was below the per se limit, were also considered incorrect arrests. Many States stipulate in their statute a driver is considered DWI if they are either above the per se limit for BAC or are impaired. Even though these arrests are legally justifiable according to an individual State's statute, these decisions are recorded as errors in the research based on the procedures outlined in the study.

Each of these studies have shown the SFSTs are scientifically validated and are a reliable method for distinguishing between impaired and unimpaired drivers.

Officers trained to administer the SFSTs must understand and be prepared to explain the statistics from the validation studies in layman terms, to effectively articulate them to a jury in a courtroom. Remember, if you do not know the answer to a defense question you can say, "I DON'T KNOW."

Session 2 - Standardized Field Sobriety Testing Review

Validation Study Exercise



ARIDE 2-8

Slide 8.

B. Overview of Selected Types of Nystagmus

Session 2 - Standardized Field Sobriety Testing Review

Nystagmus

Nystagmus is defined as the involuntary jerking of the eyes.

ARIDE 2-9

Slide 9.

Nystagmus is the involuntary jerking of the eyes. There are over 40 different types of nystagmus, but during this training we will focus on two types of nystagmus: Horizontal Gaze Nystagmus (HGN) and Vertical Gaze Nystagmus (VGN). The ability to recognize HGN and VGN are important tools in impaired driving enforcement. Alcohol and certain other drugs have been shown, through research, to cause HGN and VGN, which is visible without the aid of specialized instrumentation.



Categories of Nystagmus

- Vestibular
- Neural
- Pathological Disorders and Diseases

ARIDE

2-10

Slide 10.

Vestibular Nystagmus is caused by movement or action to the vestibular system that can occur when a subject is spun around and the fluid in the inner ear is disturbed, or there is a change in the fluid (temperature, foreign substance, etc.).

Neural Nystagmus is caused by some disturbance to the neural system. This type of nystagmus includes optokinetic nystagmus, physiological nystagmus, and gaze-evoked nystagmus.

Alcohol and/or specific types of drugs can cause three types of gaze-evoked nystagmus which may be visible to the officer during proper administration of the HGN and VGN tests.

Pathological Nystagmus. Caused by the presence of specific pathological disorder, which include brain tumors, other brain damage, or some diseases of the inner ear.

In this training we will only be concerned with gaze-evoked nystagmus.



Gaze Nystagmus

- Resting Nystagmus – Occurs as eyes gaze straight ahead
- HGN
- VGN

ARIDE

2-11

Slide 11.

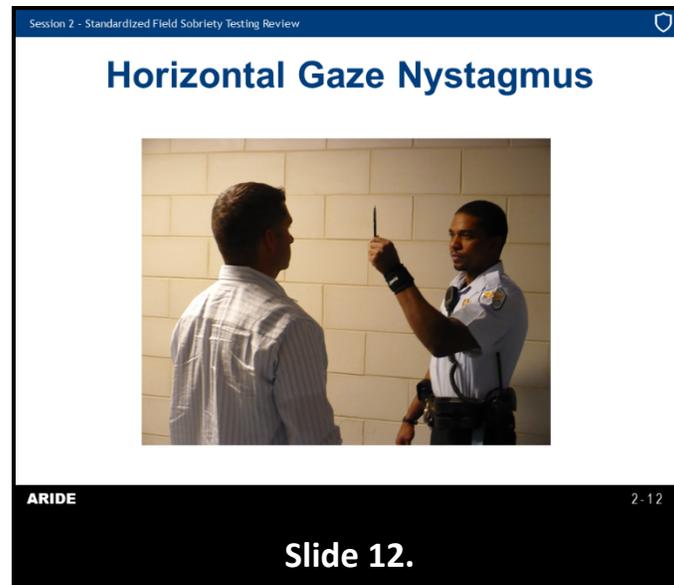
Resting Nystagmus is defined as the involuntary jerking of the eyes as they gaze straight ahead. This condition is not frequently observed. Its presence usually indicates a medical condition or high doses of a Dissociative Anesthetic drug.

As previously mentioned, during this training we will focus on two types of nystagmus:

Horizontal Gaze Nystagmus (HGN), as defined in the current SFST curriculum, is the involuntary jerking of the eyes, as the eyes gaze toward the side. HGN is useful in determining alcohol influence as well as some drug categories.

Vertical Gaze Nystagmus (VGN) occurs as the eyes gaze upward (vertical plane) to an elevated position as far as they can go. VGN is associated with a high dose of alcohol and some drug categories for that individual. Drug categories which cause VGN also cause HGN.

C. Horizontal Gaze Nystagmus



HGN is useful in determining alcohol influence, its presence may also indicate use of CNS Depressants, Inhalants, and Dissociative Anesthetics (DID) drugs.

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 movement of the eyes 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. 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.

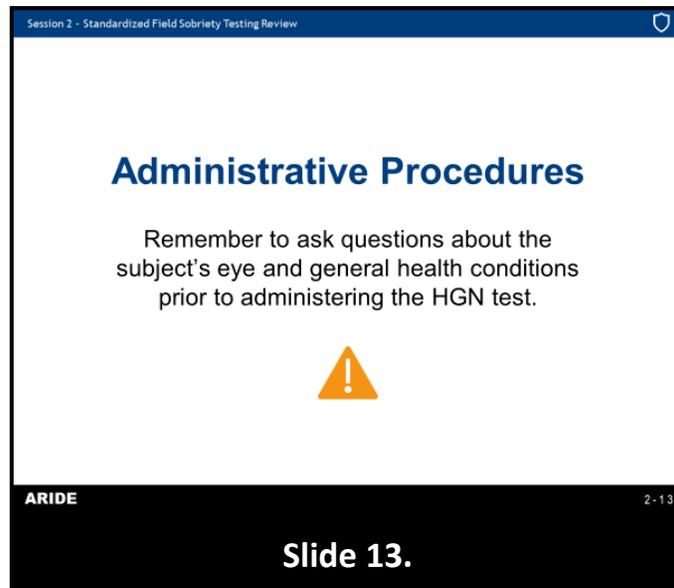
Source:

Leigh, R. J., & Zee, D. S. (2015). A Survey of Eye Movements: Characteristics and Teleology. In R. J. Leigh, & D. S. Zee, *The Neurology of Eye Movements* (5th ed., p. 12ff). Online: Oxford University Press. doi:10.1093/med/9780199969289.001.0001

HGN becomes observable when a subject is impaired by DID drugs. HGN also becomes observable when a subject is impaired by alcohol. As the subject's BAC increases, the jerking may appear sooner.

In administering the HGN test the subject must focus on a stimulus. This stimulus can be the tip of a pen or similar object that contrasts with the background and is easily seen by the subject being tested.

Remember to always follow your local policy or recommendations when selecting a stimulus.



Officers are reminded to ask questions about the subject's eye and general health conditions prior to administering the HGN test. If the subject responds or volunteer's information (he or she is blind in one eye or has an artificial eye) the officer should make note of that and may proceed with the HGN test. If there are any abnormal findings on the pre-test checks, the officer may choose not to continue with the testing. If HGN testing is continued, officers are reminded this does not follow the standardized protocol and should acknowledge such in any report.

If HGN testing is conducted on a person with a blind eye, typical inconsistent findings could be related to the blind eye not being able to see or track the stimulus, or when the normal eye can no longer see the stimulus, e.g., when checking Distinct and Sustained Nystagmus at Maximum Deviation on the blind eye side.

Source:

Citek, K. (2014). *Eye Tests on Suspect with a "Blind" Eye*. Pacific University College of Optometry.

Session 2 - Standardized Field Sobriety Testing Review

Administrative Procedures

1. Check for eyeglasses
2. Verbal instructions
3. Position stimulus (12-15 inches and slightly above eye level)
4. Check for Equal Pupil Size and Resting Nystagmus
5. Check for Equal Tracking

ARIDE 2-14

Slide 14.

Session 2 - Standardized Field Sobriety Testing Review

Administrative Procedures

6. Lack of Smooth Pursuit
7. Distinct and Sustained Nystagmus at Maximum Deviation
8. Onset of Nystagmus Prior to 45 Degrees
9. Total the clues
10. Check for Vertical Nystagmus

ARIDE 2-15

Slide 15.

Initiating the HGN Test

Begin the test by positioning the subject in a manner deemed safe by the officer and safe for the subject being tested. The subject should be turned away from emergency lights, taking care to not interfere with subject's ability to fixate on the stimulus.

1. Check for eyeglasses
2. Verbal Instructions

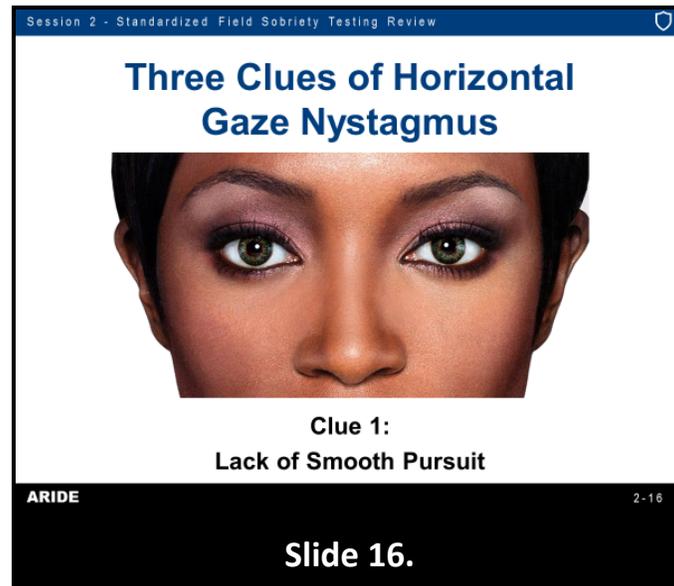
Ask the subject to:

- Remove glasses (Take a note if subject wears contacts, especially colored contacts because some colored contacts may affect the ability to compare and estimate pupil size.)
- Place feet together, hands at the side
- Keep head still
- Look at the stimulus
- Follow movement of the stimulus with eyes only
- Keep looking at the stimulus until told the test is over

It is suggested to give the subject the following verbal instructions:

- I am going to check your eyes.
 - Keep your head still and follow the stimulus with your eyes only.
 - Keep your eyes on the stimulus until I tell you to stop.
3. Position the stimulus approximately 12 to 15 inches in front of the subject's nose and slightly above eye level to commence the test.
 4. Check both eyes for Equal Pupil Size and Resting Nystagmus. Both pupils should be of equal size and there should not be any noticeable nystagmus. Take notice if the pupils are noticeably unequal in size or there is noticeable nystagmus at rest. This could be indicative of a medical condition or a head injury.

5. Check both eyes for Equal Tracking by making a horizontal pass across both eyes. The speed of the stimulus should be approximately the same speed as checking for Lack of Smooth Pursuit. This check may be done more than once. Both eyes should track the stimulus together. If the eyes fail to track together, this could be the indication of a possible medical disorder, injury, or blindness. If the eyes track together, continue with the test and document the results.



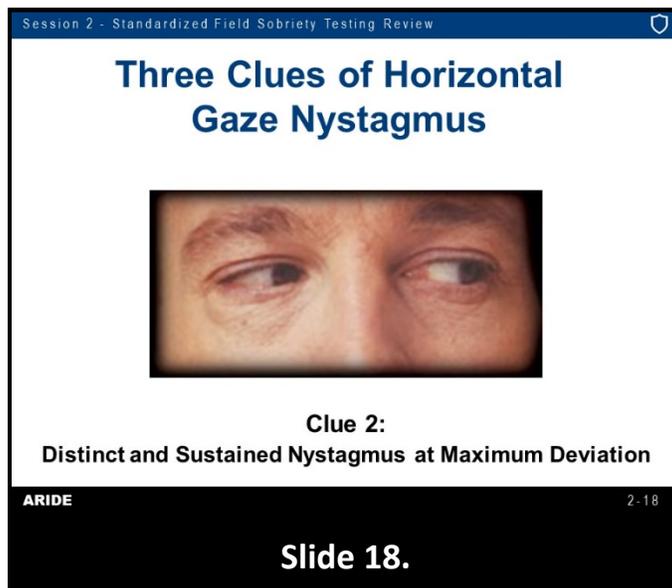
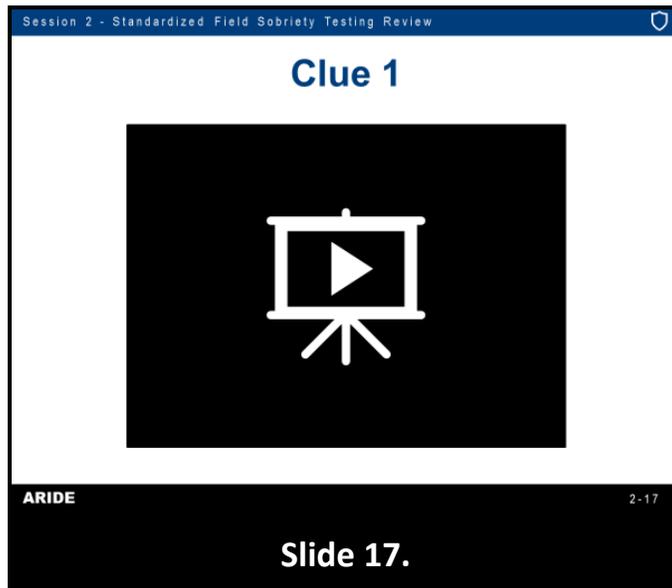
Lack of Smooth Pursuit occurs when the eyes jerk or bounce as they follow a smoothly moving stimulus.

Start with the subject's left eye

- Move the stimulus smoothly, at a speed that requires approximately two seconds to bring the subject's eye as far to the side as it can move.
- Carefully watch the subject's left eye and determine if it is able to pursue smoothly.
- Move the stimulus all the way to the left, back across the subject's face and check the right eye at the same speed. Movement of the stimulus should take approximately two seconds to move from the center of the subject's face to the left side, approximately two seconds to get back to the center, approximately two seconds to move from the center of the subject's face to the right side, then approximately two seconds to return to the center of the subject's face to end the first pass.
- Repeat the procedure until each eye has been checked twice.

The stimulus must be moved in a smooth, continuous manner without stopping at either side or the center while checking for this clue. The two-second timing is provided based on how the eye should follow the stimulus if the subject is not impaired by alcohol and/or other drugs.

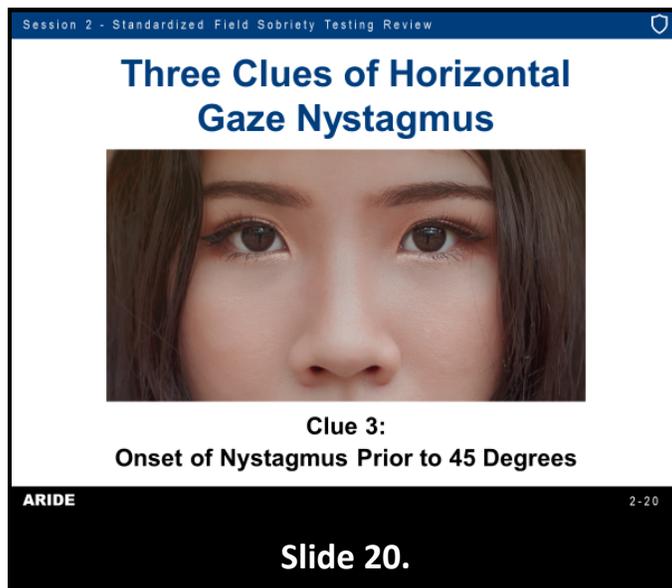
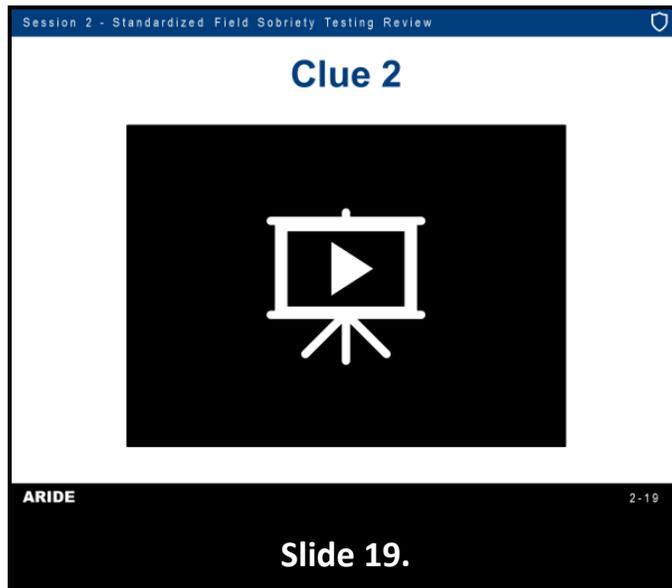
While not an actual Gaze Nystagmus, Lack of Smooth Pursuit is a validated clue in the HGN test.



Nystagmus should be distinct and sustained when the stimulus is held at extreme lateral gaze (also known as the endpoint or maximum deviation) for a minimum of 4 seconds.

Start again with the subject's left eye

- Move the stimulus to the subject's left side until there is no more white of the eye visible. The eye should not be able to move any further on the horizontal plane.
- Hold the left eye in that position for a minimum of four (4) seconds. Four seconds will not cause Fatigue Nystagmus. This type of nystagmus may begin if a subject's eye is held at maximum deviation for more than 30 seconds.
- Observe the eye for distinct and sustained nystagmus while being held in this position.
- Move the stimulus all the way to the left, back across the subject's face and check the right eye.
- Repeat the procedure until each eye has been checked twice.



Start again with the subject's left eye

- Move the stimulus at a speed approximately 4 seconds or more to travel from center to approximately 45 degrees. Moving the stimulus at a slower speed aids in observing when the eye first begins to jerk.
- Watch the eye carefully for any sign of jerking
- If jerking is observed, hold the stimulus at that position and verify the nystagmus continues. If the 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 of nystagmus, stop moving the stimulus and determine whether it is prior to the approximately 45 degrees. If nystagmus is not observed prior to approximately 45 degrees, stop and hold the stimulus at an approximate 45-degree angle to verify the nystagmus is not present.
- Check the right eye in the same manner

Session 2 - Standardized Field Sobriety Testing Review

Clue 3



ARIDE 2-21

Slide 21.

Session 2 - Standardized Field Sobriety Testing Review

Onset of Nystagmus Prior to Approximately 45 Degrees



ARIDE 2-22

Slide 22.

If the jerking begins prior to an approximate 45-degree angle, that is one clue.

Session 2 - Standardized Field Sobriety Testing Review

Three Clues of Horizontal Gaze Nystagmus

1. Lack of Smooth Pursuit
2. Distinct and Sustained Nystagmus at Maximum Deviation
3. Onset of Nystagmus Prior to 45 Degrees



ARIDE 2-23

Slide 23.

Three Clues of HGN:

1. Lack of Smooth Pursuit
2. Distinct and Sustained Nystagmus at Maximum Deviation
3. Onset of Nystagmus Prior to 45 Degrees

HGN Indications:

- Six maximum clues
- Maximum three clues per eye

According to the *Validation of the Standardized Field Sobriety Test Battery at BACs Below 0.10%* (1998 San Diego study), four or more clues of HGN indicate BAC at or above 0.08 with 88% accuracy.

Session 2 - Standardized Field Sobriety Testing Review

HGN Test Criterion

4 or more clues indicates BAC at or above 0.08 (88% accurate)



ARIDE 2-24

Slide 24.

Session 2 - Standardized Field Sobriety Testing Review

Vertical Nystagmus

- Move stimulus vertically
- Raise stimulus until individual's eyes are elevated as far as possible and hold for a minimum of four seconds
- Repeat



ARIDE 2-25

Slide 25.

- Position the stimulus horizontally, approximately 12-15 inches 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 object until the subject's eyes are elevated as far as possible
- Hold for a minimum of 4 seconds
- Watch closely for evidence of the eyes jerking upward

Session 2 - Standardized Field Sobriety Testing Review

Vertical Nystagmus



ARIDE 2-26

Slide 26.

D. Practice HGN

Session 2 - Standardized Field Sobriety Testing Review

Horizontal Gaze Nystagmus Test Interpretation

Three clues in each eye:

1. Lack of Smooth Pursuit
2. Distinct and Sustained Nystagmus at Maximum Deviation
3. Onset of Nystagmus Prior to 45 Degrees

ARIDE 2-27

Slide 27.

There are three clues in each eye for a total of six total clues.

1. Lack of Smooth Pursuit
 - Present (If present, it accounts for up to 2 clues, one in each eye)
 - None
2. Distinct and Sustained Nystagmus at Maximum Deviation
 - Present (If present, it accounts for up to 2 clues, one in each eye)
 - None
3. Onset of Nystagmus Prior to 45 Degrees

The more impaired a person becomes, the sooner the onset of nystagmus is observed.
Remember it is important to hold the eye in this position once the jerking is observed.
The observed jerking must be continuous.

- Present (If present, it accounts for up to 2 clues, one in each eye)
 - None
-

Session 2 - Standardized Field Sobriety Testing Review

Documenting Horizontal Gaze Nystagmus Clues

LEFT	RIGHT	
		✓ LACK OF SMOOTH PURSUIT
		✓ DISTINCT AND SUSTAINED NYSTAGMUS AT MAX DEV
		✓ ONSET OF NYSTAGMUS PRIOR TO 45 DEGREES

HORIZONTAL GAZE NYSTAGMUS

ARIDE 2-28

Slide 28.

The HGN test has been researched and found to be a reliable indicator of impairment with subjects at or above 0.08 BAC. Based on the 1998 San Diego field validation study, if four or more clues are observed, it is likely the subject's BAC is at or above 0.08. If two or three clues are observed, it is likely the subject's BAC is at or above 0.04 but under 0.08. When applicable, always document the HGN clues of impairment when conducting the roadside tests. Always keep officer safety in mind when documenting these clues.

Many jurisdictions have developed techniques and forms to record HGN results. These may be used as long as they follow the NHTSA/IACP curricula. The participant manual contains one example of a form that can be used.

Accurately document everything associated with the DWI arrest from the time of observation through post-arrest processing.

Session 2 - Standardized Field Sobriety Testing Review

Horizontal Gaze Nystagmus Test Demonstration



ARIDE 2-29

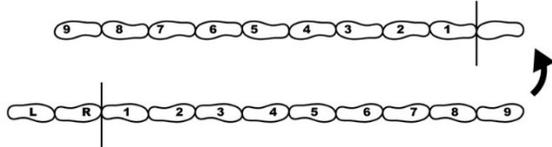
Slide 29.

E. Walk and Turn (WAT) Test

Session 2 - Standardized Field Sobriety Testing Review

Walk and Turn

Divided Attention Test: Mental Task and Physical Task



1. Instruction Stage
2. Walking Stage

ARIDE 2-30

Slide 30.

The WAT test is divided into two stages:

Instruction Stage:

- Divided attention, listening to and remembering instructions

Walking Stage:

- Balancing, walking heel-to-toe, and turning
- Small muscle control, counting out loud, short-term memory, recalling the number of steps required, turning as instructed, and counting correctly

Session 2 - Standardized Field Sobriety Testing Review

Safety Precautions



ARIDE 2-31

Slide 31.

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 positioned 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 DWI roadside investigations.

Session 2 - Standardized Field Sobriety Testing Review

Walk and Turn Test



ARIDE 2-32

Slide 32.

The test is administered the same way we have used it for SFST purposes.

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.

Considerations: WAT test requires a real or imaginary straight line and should be conducted on a reasonably dry, hard, level, non-slippery surface. There should be sufficient room for subjects to complete nine heel-to-toe steps. However, field validation studies have indicated that varying environmental conditions have not affected a subject's ability to perform this test.

Source:

Burns, M., & Anderson, E. W. (1995). *A Colorado Validation Study of the Standardized Field Sobriety Test (SFST) Battery*. Colorado Department of Transportation.

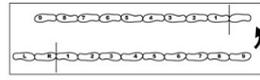
Standardizing this test for every type of road condition is unrealistic. The original research study recommended this test be performed on a dry, hard, level, non-slippery surface, and relatively safe conditions. If not, the research recommends the subject be asked to perform the test elsewhere, or only HGN be administered.

The original SCRI studies suggested subjects over 65 years of age or people with back, leg, or inner ear problems had difficulty performing this test. Less than 1.5% of the test subjects in the original studies were over 65 years of age. Subjects wearing heels more than 2 inches high or any other form of unusual footwear (flip flops, platform shoes, etc.) should be given the opportunity to remove their shoes. Officers should consider all factors when conducting the SFSTs.



Walk and Turn Test Diagram

WALK AND TURN
INSTRUCTION STAGE
CANNOT KEEP BALANCE
STARTS TOO SOON



WALKING STAGE	FIRST NINE STEPS	SECOND NINE STEPS
STOPS WALKING		
MISSES HEEL-TO-TOE		
STEPS OFF LINE		
USES ARM(S) TO BALANCE		
ACTUAL STEPS TAKEN		

IMPROPER TURN (Describe) _____
CANNOT COMPLETE TEST (Explain) _____
OTHER: _____

ARIDE

2-33

Slide 33.

- 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 stops or fails to 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.

Session 2 - Standardized Field Sobriety Testing Review

Walk and Turn Test Clues

1. Can't balance while listening to instructions
2. Starts too soon
3. Stops while walking
4. Doesn't touch heel-to-toe

ARIDE 2-34

Slide 34.

Session 2 - Standardized Field Sobriety Testing Review

Walk and Turn Test Clues

5. Steps off the line
6. Uses arm(s) to balance
7. Improper turn
8. Wrong number of steps

 Note: If subject can't complete the test, record clues that were observed and note why test was not completed.

ARIDE 2-35

Slide 35.

Look for the following clues each time the WAT test is administered.

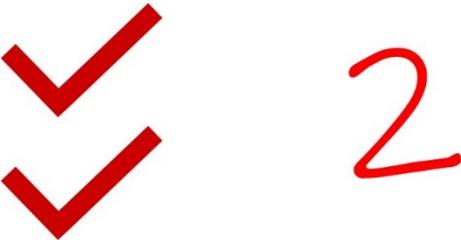
1. The subject cannot keep balance while listening to the instructions – Record this clue if the subject does not maintain the heel-to-toe position throughout the instructions. Do not record this clue if the subject sways or uses the arm(s) to balance but maintains the heel-to-toe position.
2. The subject starts too soon – Since you specifically instructed the subject not to start walking until told when to begin, record this clue if the subject starts walking before told to do so.
3. The subject stops while walking – Do not record this clue if the subject is merely walking slowly.
4. The subject does not touch heel-to-toe – The subject leaves a space of one-half inch or more between the heel and toe on any step.
5. The subject steps off the line – The subject steps so that one foot is entirely off the line.
6. The subject uses arm(s) to balance – The subject raises one or both arms 6 inches or more from the sides in order to maintain balance.
7. The subject improperly turns – The subject removes the front foot from the line while turning. Also record this clue if the subject has not followed directions as instructed (spins or pivots around or loses balance while turning).
8. The subject takes the incorrect number of steps – Record if the subject takes more or fewer than nine steps in either direction.

If a subject is unable to complete the test, he/she will be held accountable for only the clues demonstrated.

Session 2 - Standardized Field Sobriety Testing Review

Walk and Turn Test Criterion

2 or more clues indicates BAC at or above 0.08 (79% accurate)



ARIDE 2-36

Slide 36.

Based on the 1998 San Diego field validation study, if the subject exhibits two or more clues on this test or cannot complete the WAT, it indicates BAC at or above 0.08 with 79% accuracy.

Source:

Stuster, J., & Burns, M. (1998). *Validation of the Standardized Field Sobriety Test Battery at BACs Below 0.10 Percent*. Santa Barbara, CA: Anacapa Sciences, Inc.

Session 2 - Standardized Field Sobriety Testing Review

Walk and Turn Test Diagram

WALK AND TURN

INSTRUCTION STAGE

CANNOT KEEP BALANCE

STARTS TOO SOON

WALKING STAGE

STOPS WALKING

MISSES HEEL-TO-TOE

STEPS OFF LINE

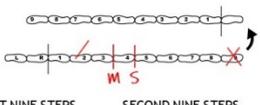
USES ARM(S) TO BALANCE

ACTUAL STEPS TAKEN

IMPROPER TURN (Describe) _____

CANNOT COMPLETE TEST (Explain) _____

OTHER: _____



	FIRST NINE STEPS	SECOND NINE STEPS
STOPS WALKING	✓	
MISSES HEEL-TO-TOE	✓	
STEPS OFF LINE		
USES ARM(S) TO BALANCE	✓	
ACTUAL STEPS TAKEN	8	

ARIDE 2-37

Slide 37.

First two clues are checked only during the instruction stage. In the boxes provided, enter a number or checks (✓) representing the number of times the clue appears during the instruction stage. Example: If the subject loses balance twice during the instruction stage, place two check marks (✓) in the box or enter "2".

Example: If the subject does not start too soon, write "N/A" in that box or leave the box blank.

Record the next four clues separately for each nine 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. 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 subject uses arm(s) to balance, give some indication of how often or how long this happened.

Example: subject raised arm(s) from side(s) three times. Place a "3" or enter three check marks (✓) in the box.

Record the actual number of steps taken by subject, in each direction. 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.

For the next clue, "Improper Turn," record a description of the turn. For example, turned incorrectly (spun or pivot), stumbled, wrong direction, no small steps, etc. If the turn is correct, note N/A or leave the box blank.

If the subject is unable to safely complete the test, you may stop the test early. Document the reasons the test was stopped. At end of the test, examine each factor and determine the total number of clues observed.

In the section labeled "other," record any facts, circumstances, conditions, or observations that may be relevant to this test.

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

F. Practice Walk and Turn

Session 2 - Standardized Field Sobriety Testing Review

Walk and Turn Demonstration



ARIDE 2-38

Slide 38.

G. One Leg Stand (OLS)

Session 2 - Standardized Field Sobriety Testing Review

One Leg Stand

1. Instruction Stage
2. Balance and Counting Stage



ARIDE 2-39

Slide 39.

The OLS test is divided into two stages:

Instruction Stage:

1. Balancing
2. Listening to instructions

The Balance and Counting Stage:

1. Balancing
2. Short-term memory

The original SCRI studies suggested subjects over 65 years of age, have back, leg, or inner ear problems, or who are overweight by 50 or more pounds 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 subjects wearing heels more than 2 inches high should be given the opportunity to remove their shoes.

Session 2 - Standardized Field Sobriety Testing Review

Administrative Procedures

- Stand straight, feet together
- Keep arms at sides
- Maintain position until told otherwise



ARIDE 2-40

Slide 40.

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

- Please stand with your feet together and your arms down at the sides, like this.
 - Do not start to perform the test until I tell you to do so.
 - Do you understand the instructions so far?
-



Administrative Procedures



ARIDE

2-41

Slide 41.

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

- When I tell you to start, raise either leg with the foot approximately six inches off the ground, keeping your foot parallel to the ground.
- Keep both legs straight and your arms at your side.
- While holding that position, count out loud in the following manner: “one thousand one, one thousand two, one thousand three,” and so on until told to stop.
- Keep your arms at your sides at all times and keep watching the raised foot.
- Do you understand?
- Go ahead and perform the test. (Officer should always time the 30 seconds. Test should be discontinued after 30 seconds.)
- Observe the subject from a safe distance.
- Although not part of the administrative procedures, if the subject puts the foot down, give instructions to pick the foot up again and continue counting from the point at which the foot touched the ground.

Session 2 - Standardized Field Sobriety Testing Review

One Leg Stand Test Clues

1. Sways while balancing
2. Uses arm(s) to balance
3. Hopping
4. Puts foot down

 Note: If suspect can't complete the test, record clues that were observed and note why test was not completed.

ARIDE 2-42

Slide 42.

Look for the following clues each time the OLS test is administered:

1. Sways while balancing – This refers to side to side or back and forth motion of the body, or a swaying motion of the foot, while in the one leg stand position.
2. Uses arm(s) to balance – Subject moves one or both arm(s) 6 or more inches from side of the body in order to keep balance.
3. Hopping – Subject is able to keep one foot off the ground, but resorts to hopping in order to maintain balance.
4. Puts foot down – The subject is not able to maintain the one leg stand position. Putting the foot down one or more times during the 30 second count.

Session 2 - Standardized Field Sobriety Testing Review

One Leg Stand Test Criterion

2 or more clues indicates BAC
at or above 0.08 (83% accurate)

ARIDE 2-43

Slide 43.

Based on the 1998 San Diego field validation study, if the subject exhibits two or more clues on this test or cannot complete the OLS, it indicates BAC at or above 0.08 with 83% accuracy.

Source:

Stuster, J., & Burns, M. (1998). *Validation of the Standardized Field Sobriety Test Battery at BACs Below 0.10 Percent*. Santa Barbara, CA: Anacapa Sciences, Inc.

H. Practice One Leg Stand

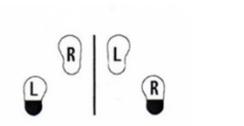
Session 2 - Standardized Field Sobriety Testing Review

One Leg Stand Test Documentation

ONE LEG STAND

L	R

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



Type of Footwear

OTHER: _____

ARIDE 2-44

Slide 44.

Each clue is noted by placing a check mark (✓) or a number in the appropriate box. For example, if the subject used their arm(s) twice and swayed three times, they would be considered to have demonstrated “two” clues. It is a good practice to use a form that documents the test results.

Session 2 - Standardized Field Sobriety Testing Review

One Leg Stand Demonstration



ARIDE 2-45

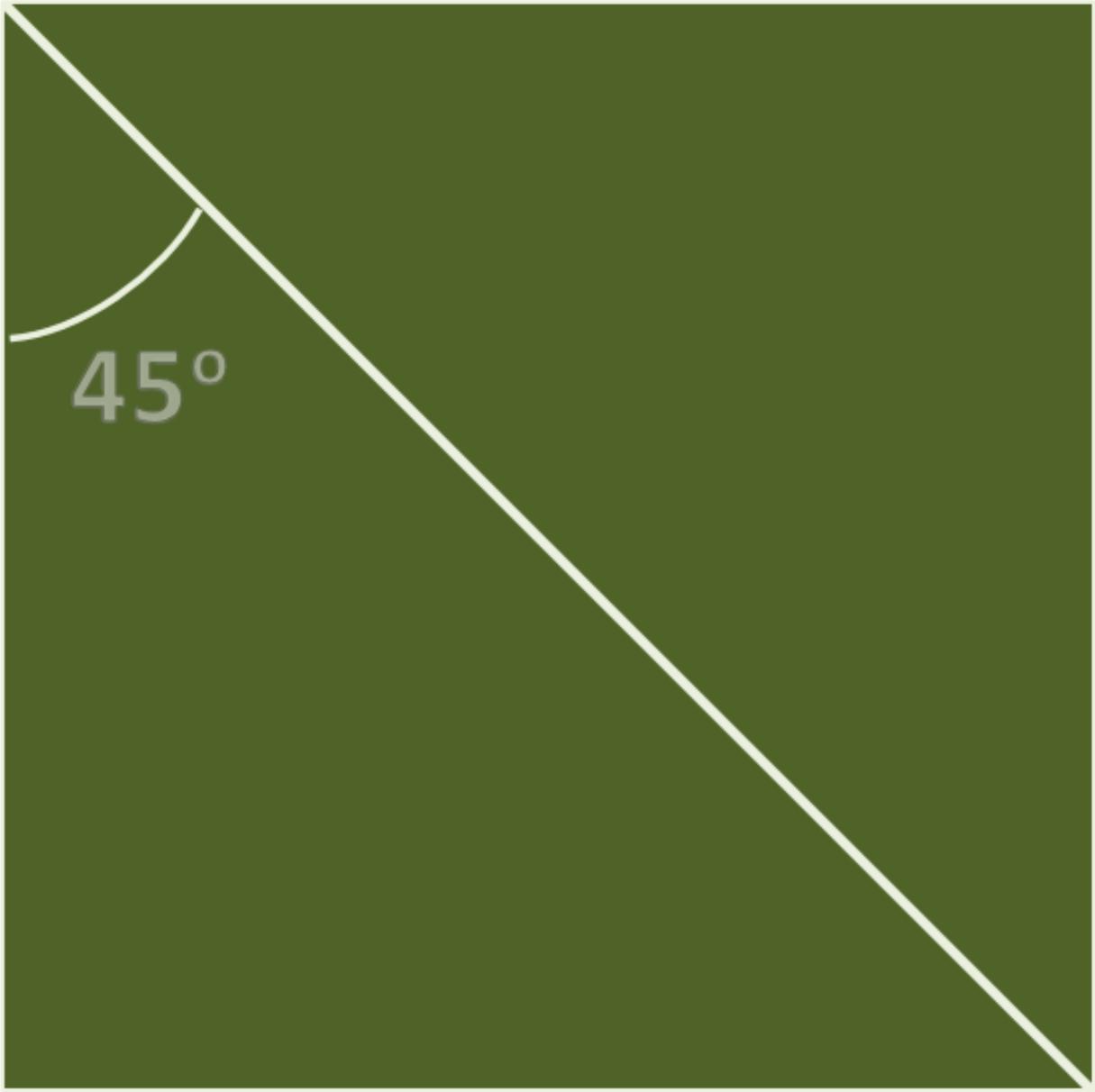
Slide 45.

Session 2 - Standardized Field Sobriety Testing Review

Questions?

ARIDE 2-46

Slide 46.



3

ARIDE

STANDARDIZED FIELD SOBRIETY TESTING PROFICIENCY EXAMINATION

LEARNING OBJECTIVES

- Demonstrate knowledge and proficiency in administering the SFSTs

LEARNING ACTIVITIES

- Instructor-Led Presentation
- Instructor-Led Demonstration
- Participant Practice Session



Session 3

Standardized Field Sobriety Testing (SFST) Proficiency Examination



ARIDE

Slide 1.



Learning Objectives

- Demonstrate knowledge and proficiency in administering SFSTs

ARIDE

3-2

Slide 2.

Session 3 - Standardized Field Sobriety Testing Proficiency Examination

SFST Proficiency

- Only two opportunities to do SFSTs correctly
- SFSTs must be performed as described in SFST training-no exceptions



ARIDE 3-3

Slide 3.

SFST is the foundation of every impaired driving training program developed, researched, and supported for over two decades. This makes it very important to be proficient in administering these tests.

NHTSA, IACP, and the courts have recognized the importance of proficiency as it relates to the detection, arrest, and prosecution of impaired drivers. By recognizing this, NHTSA and IACP committed to bridging the information gaps between the governing bodies and the agencies applying these techniques in the field.

The participant will be given only two opportunities to do the SFSTs. If the participant fails his/her first attempt, he/she will be given the opportunity to practice on his/her own or with another participant within a reasonable amount of time, not to exceed the end of the first day.

The instructor will not assist or coach the participant in any manner during the proficiency examination. The instructor will correct the participant after the completion of all three tests but will not correct the participant during the tests.

The SFSTs must be performed as described in the NHTSA/IACP SFST training – no exceptions

A **“checkmark”** will be placed in the space provided for each step completed according to the SFST manual. An **“X”** will be placed in the space if the participant does not perform the step according to the SFST manual.



Questions?

ARIDE

3-4

Slide 4.

**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.

4

ARIDE

DRUGS IN THE HUMAN BODY

LEARNING OBJECTIVES

- Describe, in general terms, the basic purpose and functions of selected major systems in the human body as they relate to observable signs
- Identify methods of administration and general effects of drugs
- Identify medical conditions that may mimic alcohol and drug impairment

CONTENTS

A. Drugs in the Human Body.....	3
B. Introduction of Selected Systems of the Human Body.....	5
C. Homeostasis	7
D. Methods of Administration.....	9
E. Medical Conditions That May Mimic Drug Impairment	10

LEARNING ACTIVITIES

- Instructor-Led Presentation



Session 4

Drugs in the Human Body



ARIDE

Slide 1.



Learning Objectives

- Describe major systems in human body
- Identify methods of administration and general effects of drugs
- Identify medical conditions that may mimic drug impairment

ARIDE

4-2

Slide 2.

A. Drugs in the Human Body

Session 4 – Drugs in the Human Body

Drugs in the Human Body



ARIDE 4-3

Slide 3.

Identifying the effects of drugs on the human body is dependent in part on recognizing changes in behavior and observable signs and symptoms related to an impaired subject. A **sign** is an observable or detectable indicator of drug influence (i.e., dilated pupils, high blood pressure). A **symptom** is a subjective indicator of drug influence reported by the drug-impaired subject (i.e., “I feel nauseous”). To gain a better understanding of how alcohol and/or drugs affect bodily functions, it is helpful to be familiar with some of the processes of the human body.

This session is designed to:

- Provide the participant with a general overview related to how drugs affect the body in basic terms.
 - Highlight those systems involved with distribution, absorption, metabolism, and elimination of alcohol and/or other drugs in the body.
-

Session 4 – Drugs in the Human Body

What is a Drug?

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

ARIDE 4-4

Slide 4.

As we progress through this training, it is important to understand how drugs are defined. This slide and the following slide provides operational definitions for drug and psychoactive drug, which describe most of the drugs we discuss in this training.

A **drug** is any substance that, when taken into the human body, can impair the ability of the person to operate a vehicle safely. **This definition of a drug is the same definition used in the DEC Program and is derived from the California Vehicle Code.**

Session 4 – Drugs in the Human Body

Psychoactive Drugs

A chemical that alters brain/body function resulting in temporary changes in:

- Perception
- Mood
- Consciousness
- Behavior

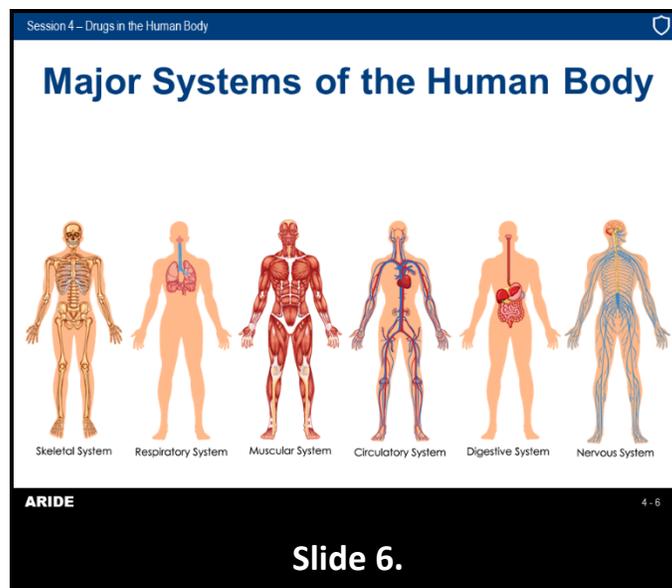


ARIDE 4-5

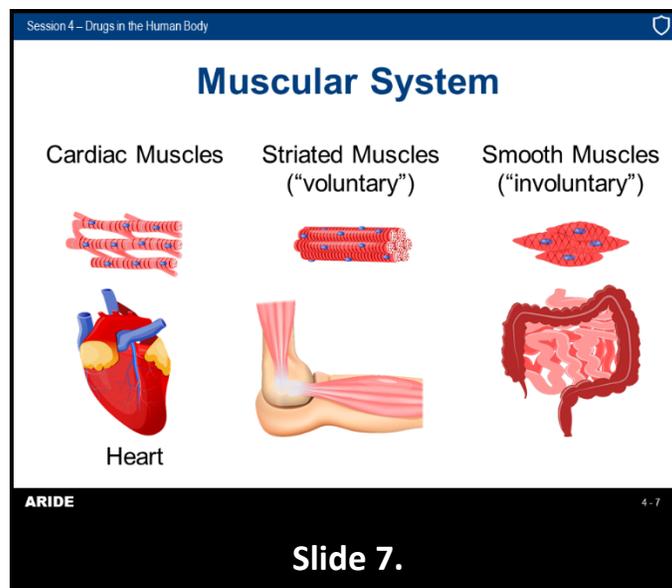
Slide 5.

A **psychoactive drug** (or substance) is a chemical that alters brain/body function resulting in temporary changes in perception, mood, consciousness, or behavior. Such drugs are often used for recreational purposes, spiritual purposes, medical purposes (especially for treating neurological problems), and psychological illnesses and deficiencies.

B. Introduction of Selected Systems of the Human Body

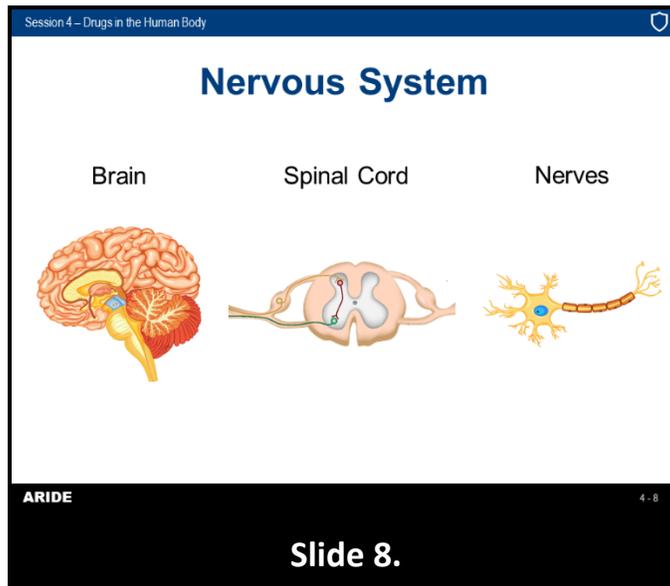


There are ten major systems in the human body covered in detail in the DRE training. These are muscular, urinary, respiratory, digestive, endocrine, reproductive, skeletal, integumentary (skin), nervous, and circulatory systems. Only the muscular and nervous systems will be discussed in this training.



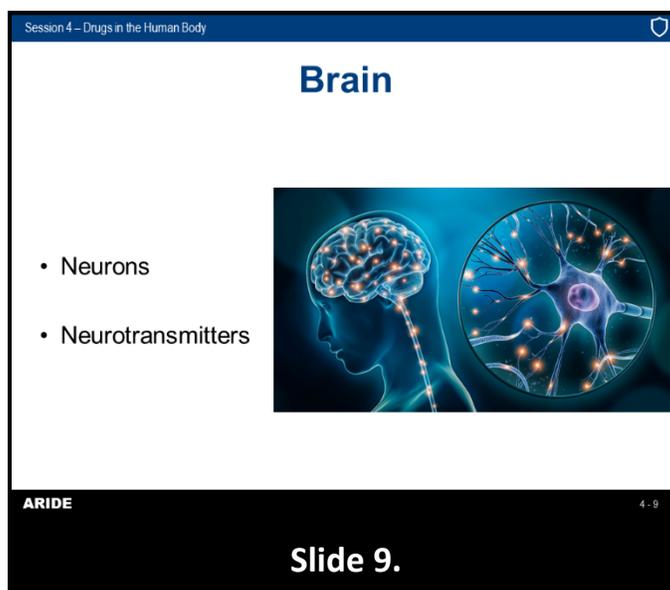
The body has three types of muscles. These are the heart, striated muscles (which control voluntary movements), and smooth muscles (which control involuntary movements).

The brain controls the operation of all these muscles through the nervous system. The impact of drugs and alcohol on the muscular system can often be observed during the Walk and Turn (WAT) and One Leg Stand (OLS) tests, as well as during general observations.



The nervous system serves as the control center for the human body. It consists of the brain, spinal cord, and nerves. Each of these components is made up of nerve cells (neurons) and supporting tissues. The nervous system keeps the body apprised of changes in the environment by enabling sight, hearing, smell, taste, and touch. It keeps the body apprised through sensations of temperature, pressure, pleasure, and pain. The nervous system also enables reasoning, memory, and emotions.

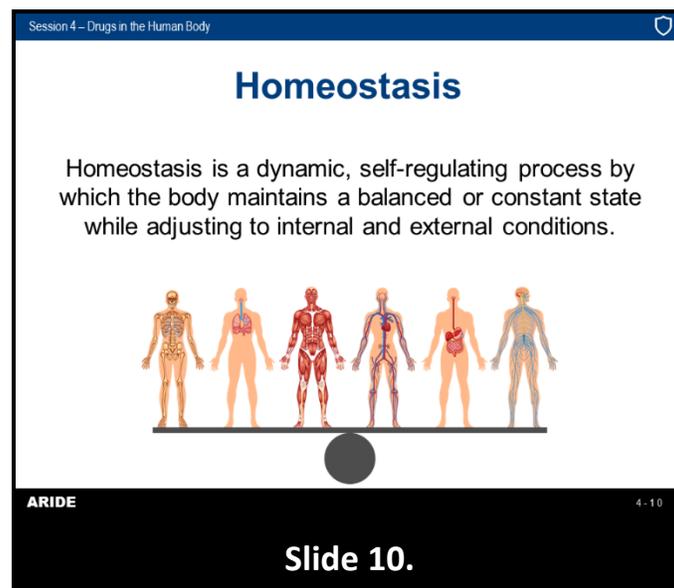
The central nervous system (CNS) sends impulses that cause muscles to contract and glands to secrete. It works with all body systems to integrate all physiological processes so normal functions can be maintained. Much of the activity of the nervous system is involuntary (autonomic) and therefore is carried 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.



The brain is made up of billions of nerve cells, also known as neurons. Nerve cells communicate by transferring chemical substances between each other. These chemical substances are

referred to as neurotransmitters. When a message is sent from one neuron (transmitter) it triggers the release of neurotransmitters and sends the message to another nerve cell 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 function. Some drugs affect the brain because their chemical makeup is similar to the neurotransmitters which naturally occur in the body. In the appropriate dose amount, certain 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.

C. Homeostasis



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).

Source:

Britannica, T. Editors of Encyclopaedia. (2020, May 27). *homeostasis*. Retrieved from Encyclopedia Britannica: <https://www.britannica.com/science/homeostasis>

“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.

As discussed earlier in this session, the human body is made up of systems. These systems are in a dynamic equilibrium. Under normal circumstances, the systems seek a balance in which internal change continuously compensates for external change in a feedback control process to keep conditions relatively level. An example of homeostasis is the body regulating its internal temperature by shivering or sweating. Shivering produces body heat and sweating causes the

body to cool down. Other examples of homeostasis are maintaining supplies of bodily fluids, bringing in oxygen and eliminating carbon dioxide, eliminating waste, and integrating functions of various body systems. Every organ system plays a role in the maintenance of homeostasis.

Session 4 – Drugs in the Human Body

Interactions of Drugs and the Body



ARIDE 4-11

Slide 11.

When drugs interact in the body, they tend to speed things up, slow things down, or some combination.

Drug Effects: The intensity and level of impairment depend upon drug and dosage amounts, age, weight, and/or tolerance level. Other variables may dictate the duration of actual impairment, such as time of use and whether other substances have been consumed.

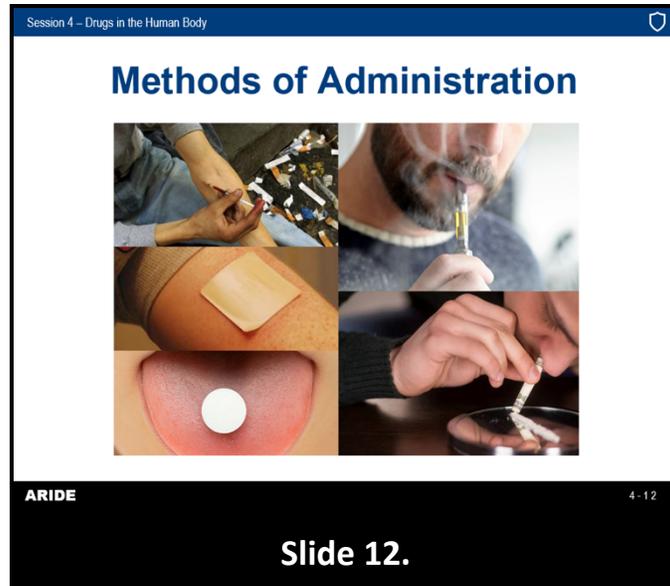
In very simple terms, drugs work by artificially creating natural body reactions generally associated with the work of neurotransmitters and hormones. Therapeutic doses of legitimate prescription and over-the-counter drugs are designed to produce mild and carefully controlled simulations of the natural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

D. Methods of Administration



For 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.

Oral administration is through the mouth.

Injection is a common method of administering drugs such as CNS Stimulants, Dissociative Anesthetics, and Narcotic Analgesics into the body. Heroin and methamphetamine are commonly injected. CNS Depressants can also be injected but this is uncommon due to the size of the needle required to deliver the substance.

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

Insufflation is the act of introducing a substance by inhaling through the nose for the purpose of intranasal absorption through the mucous membrane. For a substance to be effective when insufflated, it must be readily absorbed through the mucous membranes. This method is commonly referred to as “snorting”.

Drug categories that are commonly introduced into the body through insufflation are:

- CNS Depressants
- CNS Stimulants
- Hallucinogens
- Dissociative Anesthetics
- Narcotic Analgesics

Inhalation is the act of introducing a substance directly into the respiratory system through the nose and mouth for the purpose of absorbing the substance through the alveoli in the lungs. This is a very rapid method of absorption and is often referred to as huffing, sniffing, smoking, or vaping.

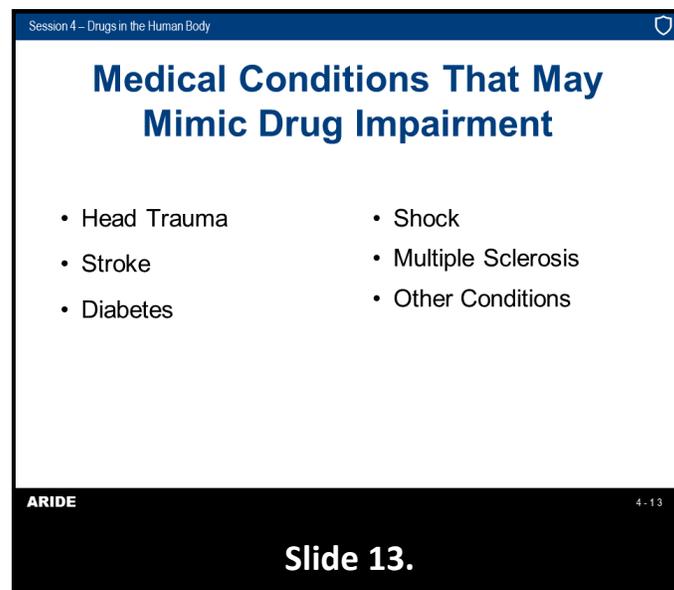
Drug categories commonly introduced into the body through inhalation are:

- Stimulants – smoking
- Hallucinogens – smoking
- Dissociative Anesthetics – smoking
- Narcotic Analgesics – smoking, vaping
- Inhalants – inhaling
- Cannabis – smoking, vaping

Transdermal Absorption is a less common method of administering drugs. Transdermal means the chemical or drug is absorbed into a subject's system through the skin.

Drugs that can 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.

E. Medical Conditions That May Mimic Drug Impairment



The image shows a presentation slide titled "Medical Conditions That May Mimic Drug Impairment". The slide is part of "Session 4 - Drugs in the Human Body" and is labeled "Slide 13." at the bottom. The slide content lists the following conditions:

- Head Trauma
- Stroke
- Diabetes
- Shock
- Multiple Sclerosis
- Other Conditions

The slide also includes the text "ARIDE" and "4-13" in the bottom left and right corners, respectively.

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, other conditions.

Session 4 – Drugs in the Human Body

Head Trauma

- Confusion
- Disoriented
- Lack of coordination
- Slowed responses
- Speech impairment
- Unequal pupils
- Unequal tracking



ARIDE 4-14

Slide 14.

A severe blow or bump to the head may injure the brain and create:

- Confusion
- Disoriented
- Lack of coordination
- Slowed responses
- Speech impairment
- Unequal pupil size
- Unequal tracking

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.

Session 4 – Drugs in the Human Body

Stroke

- Unequal pupils
- Weakness on one side of the body
- Slurred speech, facial droop
- Confused, frightened



ARIDE 4-15

Slide 15.

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.

Session 4 – Drugs in the Human Body

Diabetes

- Confused or non-responsive
- Sweat profusely
- Cold, clammy skin
- Rapid, weak pulse
- May require immediate medical attention



ARIDE 4-16

Slide 16.

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 condition is referred to as insulin shock. A diabetic in insulin shock may appear very confused, be non-responsive, sweat profusely, exhibit elevated pulse rate, and/or have elevated blood pressure.

Session 4 – Drugs in the Human Body

Shock

- Occurs when the body is not getting enough blood flow
- Requires immediate medical attention
 - ✓ Dazed
 - ✓ Uncoordinated
 - ✓ Non-responsive

ARIDE 4-17

Slide 17.

Shock is a life-threatening condition that occurs when the body is not getting enough blood flow. This can damage multiple organs and lead to death. Shock requires IMMEDIATE medical treatment and can get worse very rapidly. Subjects in shock often will appear dazed, uncoordinated, and non-responsive.

Session 4 – Drugs in the Human Body

Multiple Sclerosis

- May lack coordination
- Tremors
- Slurred or garbled speech
- May appear alert and responsive to questions

ARIDE 4-18

Slide 18.

Victims of Multiple Sclerosis (MS) and other degenerative neurological disorders may lack coordination or exhibit gait ataxia, 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.

Session 4 – Drugs in the Human Body

Mental Health

- Anxiety (Panic Disorder)
- Depression
- Bipolar Disorder
- Schizophrenia



ARIDE 4-19

Slide 19.

There are some mental health conditions that may affect vital signs such as anxiety, depression, bipolar disorder, and schizophrenia.

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

Source:

National Institute of Mental Health. (2018, July). *Anxiety Disorders*. Retrieved March 30, 2022, from National Institute of Mental Health: <https://www.nimh.nih.gov/health/topics/anxiety-disorders>

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 and 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

Source:

National Institute of Mental Health. (2018, February). *Depression*. Retrieved March 30, 2022, from National Institute of Mental Health: <https://www.nimh.nih.gov/health/topics/depression>

Bipolar disorder is a serious mental illness. People who have it go through unusual mood changes. They go from very happy, “up,” and active to very sad and hopeless, “down,” and inactive, and then back again. They often have normal moods in between. The up feeling is called mania. The down feeling is depression (National Institute of Mental Health, 2020).

Source:

National Institute of Mental Health. (2020, January). *Bipolar Disorder*. Retrieved March 30, 2022, from National Institute of Mental Health: <https://www.nimh.nih.gov/health/topics/bipolar-disorder>

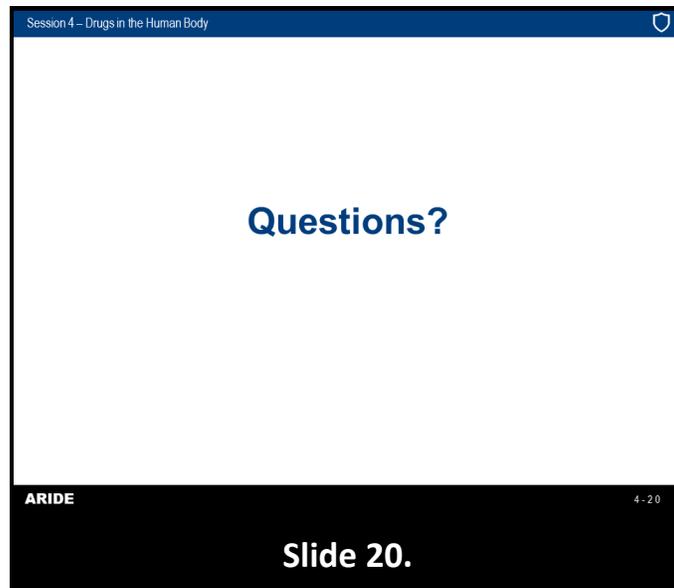
Schizophrenia is a chronic and severe mental disorder that affects how a person thinks, feels, and behaves. People with schizophrenia may seem like they have lost touch with reality. Symptoms may include hallucinations, delusions, thought disorders (unusual or dysfunctional ways of thinking), movement 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 (National Institute of Mental Health, 2020).

Source:

National Institute of Mental Health. (2020, May). *Schizophrenia*. Retrieved March 30, 2022, from National Institute of Mental Health:

<https://www.nimh.nih.gov/health/topics/schizophrenia>

When an officer encounters or suspects a potentially serious medical condition, he/she should consider involving medical services. DREs are trained to recognize signs of medical impairment.



5

ARIDE

OBSERVATION OF THE EYES AND ADDITIONAL TESTS FOR DRUG IMPAIRMENT

LEARNING OBJECTIVES

- State the purposes of various eye examinations used in the Advanced Roadside Impaired Driving Enforcement (ARIDE) training, which includes Horizontal Gaze Nystagmus (HGN), Vertical Gaze Nystagmus (VGN), and Lack of Convergence (LOC)
- Administer the LOC test properly and describe what the results indicate
- Describe the difference in pupil size
- Administer the Modified Romberg Balance (MRB) test properly and describe what the results indicate
- Administer the Finger-to-Nose (FTN) test properly and describe what the results indicate
- Explain the relationship between eye examinations and the seven drug categories

CONTENTS

A. Various Eye Examinations Used in the ARIDE Curriculum.....	3
B. Lack of Convergence.....	4
C. Describe the Difference in Pupil Size.....	8
D. Modified Romberg Balance Test.....	9
E. Finger-to-Nose.....	12
F. Relationship Between the Eye Examinations and the Seven Drug Categories.....	16

LEARNING ACTIVITIES

- Instructor-Led Presentation
- Participant Practice Session

Session 5

Observation of the Eyes and Additional Tests for Drug Impairment



ARIDE

Slide 1.

Learning Objectives

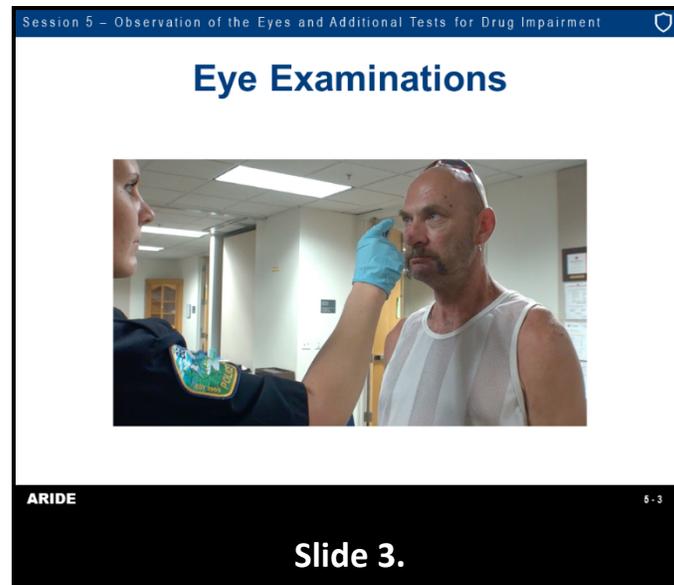
- State purposes of ARIDE eye examinations
- Administer LOC test
- Describe the difference in pupil size
- Administer Modified Romberg Balance test
- Administer Finger-to-Nose test
- Explain relationship between eye examinations and seven drug categories

ARIDE

5-2

Slide 2.

A. Various Eye Examinations Used in the ARIDE Curriculum



The eyes can disclose indicators of drug impairment or medical conditions.

HGN is an excellent indicator of possible alcohol impairment, but there are other drugs that may also cause HGN. Drug categories that may cause HGN include CNS Depressants, Inhalants, and Dissociative Anesthetics (DID) drugs. The same drugs that cause HGN may cause VGN. There is no known drug that may cause VGN without causing at least four clues of HGN. In addition to HGN, there are many other clues the eyes may disclose, all of which may suggest the presence or absence of drugs or medical impairment.

The test for LOC determines whether the subject is able to cross his or her eyes. The check for LOC can provide another clue as to the possible presence of DID drugs and is also an indicator of cannabis.

Drug categories that do not cause HGN, cause a change to occur in pupil size. These categories either dilate or constrict the pupils. By carefully observing the subject's eyes you may observe evidence of drug impairment.

B. Lack of Convergence

Session 5 – Observation of the Eyes and Additional Tests for Drug Impairment

Lack of Convergence

The inability of the person's eyes to converge or cross as the person attempts to focus on a stimulus as it is pushed towards the bridge of the nose.



ARIDE 5-4

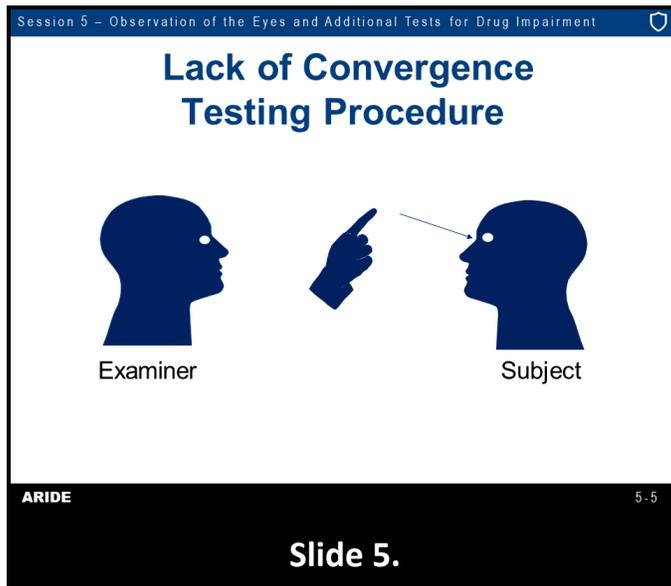
Slide 4.

The definition of LOC is the inability of the person's eyes to converge or "cross" as the person attempts to focus on a stimulus as it is pushed towards the bridge of the nose. The check for LOC can provide another clue as to the possible presence of DID drugs and cannabis.

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, may result in LOC causing 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).

Source:

Leigh, R. J., & Zee, D. S. (2015). A Survey of Eye Movements: Characteristics and Teleology. In R. J. Leigh, & D. S. Zee, *The Neurology of Eye Movements* (5th ed., p. 12ff). Online: Oxford University Press. doi:10.1093/med/9780199969289.001.0001



Administrative Procedures

Instruction Stage

- Advise the subject they will have to keep their head steady and try to cross the eyes in order to keep their eyes focused on the stimulus as it moves in toward the nose.
- Advise the subject you will not actually touch the subject's nose.
- Keep the object 12-15 inches away from the subject's nose and start to move the stimulus slowly in a circle.
- Verify the subject is tracking the stimulus.
- Stop moving in a circular manner with the stimulus above eye level.
- Move the stimulus to within approximately two inches from the bridge of the subject's nose and hold for approximately one second.
- Carefully observe the subject's eyes to determine whether both eyes converge on the stimulus.
- It is recommended to check for LOC at least two times to confirm the finding. If the results differ, then a third check is permissible to confirm the observations. No delay between checks is required.

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



ARIDE

5-6

Slide 6.

Test Interpretation: If the eyes converge (cross) when the stimulus is approximately two inches from the bridge of the nose, then LOC is none. LOC is present if the subject's eyes **do not** come together and cross as they track and stay aligned on the stimulus. In a non-impaired subject, the eyes should come together (converge) and remain converged for one second.

If the eyes do not converge or remain converged on the stimulus for one second, then LOC is present.

Lack of Convergence



ARIDE

5-7

Slide 7.

A subject's eyes exhibiting LOC may track in several possible paths.

Session 5 – Observation of the Eyes and Additional Tests for Drug Impairment

Lack of Convergence Examples

ARIDE 5-8

Slide 8.

Left eye unable to converge:

Both eyes began to converge, however, the left eye bounced down and back out.

Both eyes unable to converge:

Both eyes began to converge, however, they both stopped before the convergence was completed.

There are no validated clues associated with the LOC test. The officer should note all observations associated with this test and whether convergence is present or not present. The officer should document their observations as to the movement of the eyes during this test.

Session 5 – Observation of the Eyes and Additional Tests for Drug Impairment

Drug Categories That Usually Cause Lack of Convergence

- CNS Depressants
- Inhalants
- Dissociative Anesthetics
- Cannabis

ARIDE 5-9

Slide 9.

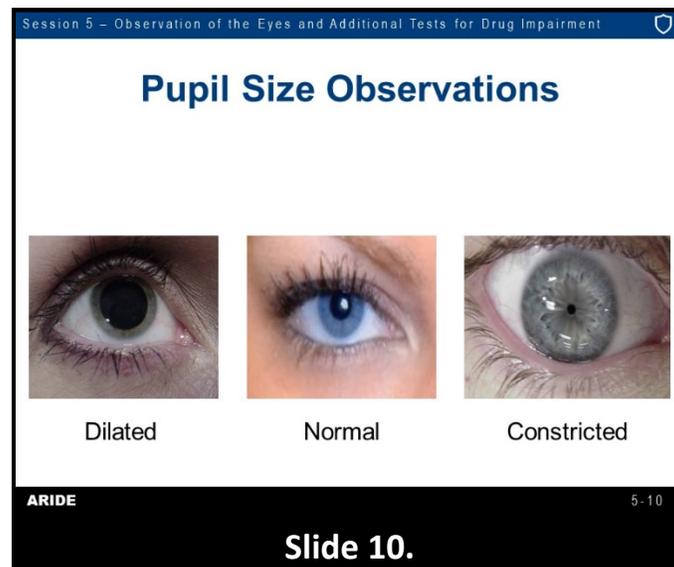
The following drug categories may cause LOC:

- CNS Depressants
- Inhalants

- Dissociative Anesthetics
- Cannabis

These four drug categories are often referred to as DIDC drugs.

C. Describe the Difference in Pupil Size



The pupil is a circular hole in the middle of the iris which regulates the amount of light that passes through into the retina. The pupils of the eyes continually adjust in size to accommodate different lighting conditions and refocus according to focal length. When placed in a darkened environment, the pupils will normally expand in size (dilate) to allow the eyes to capture as much light as possible. When the lighting conditions are very bright, the pupils will normally shrink (constricted) to limit the amount of light that passes through and to keep the eyes from being overstimulated. This process of constriction and dilation normally occurs within certain limits. An example would be a stop made during the day, you should expect to see the pupils somewhat smaller, because of the bright lighting conditions.

In this training, officers learn to recognize the noticeable differences in pupil sizes. If the two pupils are distinctly different in size, it is possible the subject has a prosthetic eye or is suffering from a head injury or a neurological disorder. Each of the seven drug categories has a predictable effect on pupil sizes. This will be discussed in the later sessions.

Dilated pupils – The pupils appear larger than expected for the given lighting condition resulting in a noticeably larger opening (circle) in the center of the eye.

Constricted pupils – When pupils appear smaller than expected for the given lighting conditions, resulting in a noticeably smaller opening (circle) in the center of the eye.

The effects drugs have on the eyes are involuntary reactions, which mean they cannot be controlled by the subject.

Session 5 – Observation of the Eyes and Additional Tests for Drug Impairment

Pupil Observations

Dilated Normal Constricted

ARIDE 5-11

Slide 11.

D. Modified Romberg Balance Test

Session 5 – Observation of the Eyes and Additional Tests for Drug Impairment

Modified Romberg Balance Test

- Divided attention
- Time estimation



ARIDE 5-12

Slide 12.

The MRB test is adapted and modified from its original use as a neurological assessment tool. It can be administered to check a subject’s time estimation, balance, and presence of tremors (eyelid and body). Since part of the MRB test checks for balance, care should be taken to ensure the test is conducted on a level surface and in an environment that is appropriate for this type of test when conducted at roadside.

The 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.

The officer 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 officer should stop the test and record the fact it was terminated at 90 seconds.

Stages of Modified Romberg Balance Test

1. Instruction stage
2. Balancing stage



ARIDE

5-13

Slide 13.

The two stages for the MRB test are the instruction stage and the balancing stage.

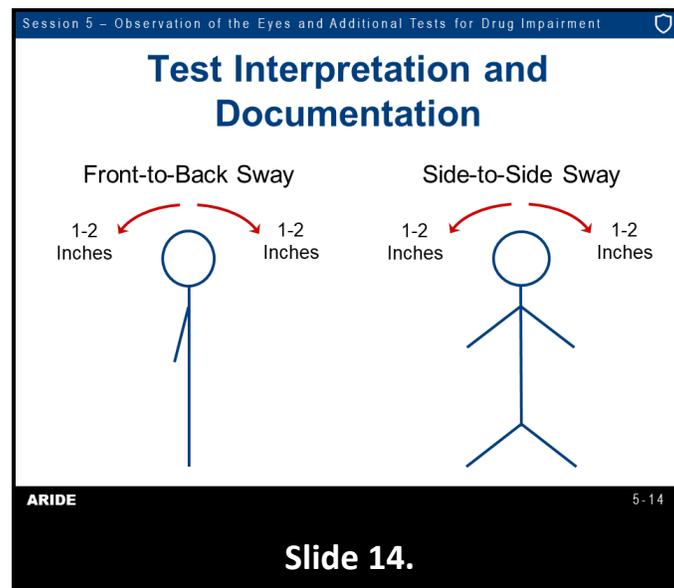
Administrative Procedures

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, 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 until either the subject says 'Stop', or the test is terminated.

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.



During the MRB test watch for three indicators simultaneously.

- Passage of 30 seconds
- Observation of tremors (eyelid and/or body or muscle)
- Observation of sway (front-to-back, side-to-side, circular/rotational)

Recording Results of the MRB Test

The major items that need to be recorded for the MRB test are:

- The amount the subject sways.
- The actual amount of time the subject keeps their eyes closed.
- To record swaying, the officer must estimate how many inches the subject sways, either front-to-back or left-to-right, or both.
- In some cases, the subject may exhibit a circular or rotational sway. An estimate of the amount of sway should be documented if observed.

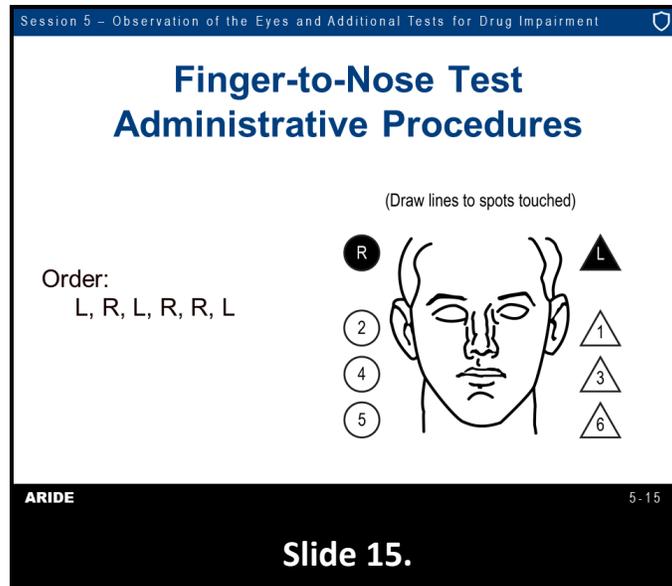
Example: If the subject sways approximately two inches toward the left and approximately two inches toward the right, the officer should write the number “2” on each side of the “stick figure” that shows left-to-right movement. To record the subject’s time result, simply write the

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.

Source:

Hartman, R. L., Richman, J. E., Hayes, C. E., & Huestis, M. A. (2016). Drug Recognition Expert (DRE) examination characteristics of cannabis impairment. *Accident Analysis and Prevention, 92*, 219-229. Retrieved from <https://doi.org/10.1016/j.aap.2016.04.012>

E. Finger-to-Nose



The FTN is another divided attention test used to detect drug impairment. FTN differs from the other three tests in the officer must continue to give instructions to the subject throughout the test.

- 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 officer.
- The officer 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 officer must tell the subject they will be asked to touch the tip of the index finger to the tip of the nose.
- The officer 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 officer 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 officer says to open them.
- The officer should demonstrate the stance with head tilted back, arms at the sides with index fingers extended. Remind the participants they should not close their eyes during the instructions for safety reasons.

Session 5 – Observation of the Eyes and Additional Tests for Drug Impairment

Finger-to-Nose Test Recording Results

(Draw lines to spots touched)

Order:
L, R, L, R, R, L

ARIDE 5-16

Slide 16.

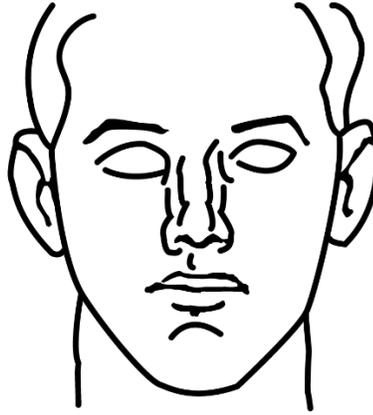
Recording Results of the FTN Test

- 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 officer draws the line from the place where the subject touches to the appropriate circle or triangle, it enables them to draw a straighter line

Draw lines to spots touched:

Right ○ Left △

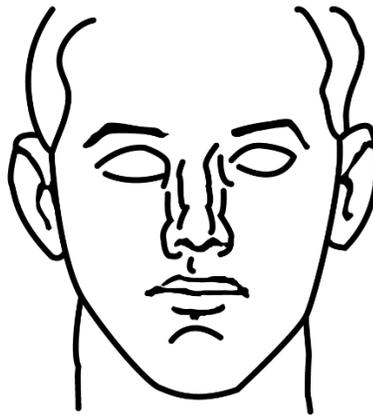
Order:
L,R,L,R,R,L



Draw lines to spots touched:

Right ○ Left △

Order:
L,R,L,R,R,L



Finger-to-Nose Test Interpretation

ARIDE

5-17

Slide 17.

The FTN test is effective in identifying drug impairment for a variety of different drugs. For example, the Drug Recognition Expert (DRE) Examination Characteristics of Cannabis Impairment study revealed subjects who were impaired by cannabis missed touching the tip of their nose or used the pad of the finger instead of the tip, in more than 87% of the cases. Other indicators of impairment noted during this test include eyelid tremors and body tremors.

Source:

Hartman, R. L., Richman, J. E., Hayes, C. E., & Huestis, M. A. (2016). Drug Recognition Expert (DRE) examination characteristics of cannabis impairment. *Accident Analysis and Prevention*, 92, 219-229. Retrieved from <https://doi.org/10.1016/j.aap.2016.04.012>

F. Relationship Between the Eye Examinations and the Seven Drug Categories

Session 5 – Observation of the Eyes and Additional Tests for Drug Impairment

Relationships to the Categories

	CNS Dep.	CNS Stim.	Hall.	Dissoc. Anest.	Narc. Analg.	Inhalant	Cannabis
HGN	Present	None	None	Present	None	Present	None
VGN	Present	None	None	Present	None	Present	None
LOC	Present	None	None	Present	None	Present	Present
Pupil Size	Normal *	Dilated	Dilated	Normal	Constricted	Normal **	Dilated ***

*Soma, Quaaludes, and some antidepressants usually dilate pupils
 **May be dilated
 ***May be normal

ARIDE 5-18

Slide 18.

Eye observations can provide valuable information which can help determine impairment. Additionally, as discussed in Session 2, HGN is a critical part of assessing subjects suspected of being impaired by alcohol. HGN also plays a significant part in the evaluation of subjects who might be impaired by drugs alone or in combination with alcohol. Pupil size, in addition to HGN, VGN, and LOC, can provide information that contributes to the overall process of determining whether a subject is impaired or not impaired by alcohol and/or drugs.

A chart is provided in Session 6 to assist in recognizing signs of alcohol, drug, or a combination of both alcohol and drug impairment relative to eye observations. This chart or any of the other information presented in this training relative to a specific drug category is not meant to encourage the officer to connect their observations to a specific drug category.

The officer who successfully completes this course shall use only their roadside observations to make a decision as to whether the subject is impaired or not impaired according to their specific State’s statutes and support an arrest or no arrest decision.

Important Note: (Caution) Although effects displayed in the chart are what you will usually find when observing a subject impaired by various types of drugs, you may not always find them. Not everyone is affected the same way by drugs. You need to remember this when describing drug effects. It is best to “never say never” and “always avoid saying always”.

The officer who completes this training is NOT certified as a Drug Recognition Expert (DRE) and does not have the training required to support the selection of a specific drug category which may be the source of the subject’s impairment. It is strongly recommended an officer, whenever possible, involve a DRE in the post-arrest investigation.



Questions?

ARIDE

5-19

Slide 19.

6

ARIDE

SEVEN DRUG CATEGORIES

LEARNING OBJECTIVES

- Identify common drug names and terms associated with the seven drug categories
- Identify the common methods of administration for each category
- Describe the indicators of impairment associated with each category
- Describe conditions which may mimic the signs and symptoms associated with each drug category
- List the indicators which may emerge during the three phases of the DWI detection process (Vehicle in Motion, Personal Contact, and Pre-Arrest Screening) which may indicate the subject is under the influence of a drug(s)

CONTENTS

A. Overview of the Drug Categories	3
B. Officer Safety	52

LEARNING ACTIVITIES

- Instructor-Led Presentation

Session 6 – Seven Drug Categories



Session 6

Seven Drug Categories



ARIDE

Slide 1.

Session 6 – Seven Drug Categories

Learning Objectives

- Identify common drug names and terms associated with the seven drug categories
- Identify common methods of administration for each category
- Describe indicators of impairment associated with each category

ARIDE 6-2

Slide 2.

Session 6 – Seven Drug Categories

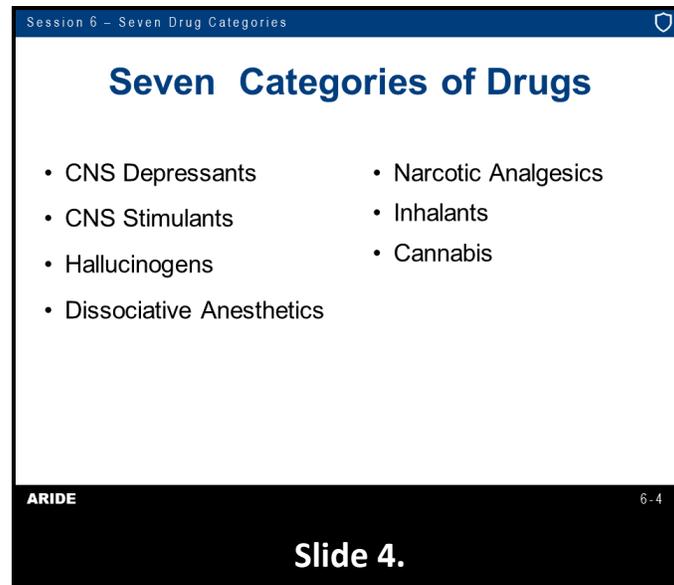
Learning Objectives

- Describe conditions which may mimic signs and symptoms associated with each drug category
- List indicators which may emerge during the three phases of the DWI detection process which may indicate the subject is under the influence of a drug(s)

ARIDE 6-3

Slide 3.

A. Overview of the Drug Categories



Session 6 – Seven Drug Categories

Seven Categories of Drugs

- CNS Depressants
- CNS Stimulants
- Hallucinogens
- Dissociative Anesthetics
- Narcotic Analgesics
- Inhalants
- Cannabis

ARIDE 6-4

Slide 4.

The CNS Depressants category includes alcohol, the single most commonly abused and most familiar drug in America. Most of the public is familiar with the effects of alcohol either through personal experience and/or seeing others impaired by alcohol. This familiarity with the indicators of impairment associated with alcohol makes the CNS Depressants category relatively straightforward.

The seven categories of drugs are:

- Central Nervous System (CNS) Depressants
 - CNS Stimulants
 - Hallucinogens
 - Dissociative Anesthetics
 - Narcotic Analgesics
 - Inhalants
 - Cannabis
-

Session 6 – Seven Drug Categories

Seven Drug Categories CNS Depressants



ARIDE 6-5

Slide 5.

CNS Depressants are drugs that slow down the operations of the central nervous system (CNS). According to the DEC Program, for a drug to be classified as a CNS Depressant it must depress the activity of a subject's brain and CNS.

Session 6 – Seven Drug Categories

CNS Depressant

Depressants slow down the activity of an individual's brain and central nervous system.

ARIDE

Slide 6.

The CNS Depressant category initially affects a person's speech, coordination, and mobility. The body's nervous system is affected by these drugs and may cause impairment. Some people may not be impaired at therapeutic doses (the amount of a drug needed to treat a disease or condition), however, some CNS depressant drugs are impairing at all levels.

Session 6 – Seven Drug Categories

Commonly Abused CNS Depressants

- Alcohol
- Soma
- Ambien
- Valium
- Klonopin
- Xanax



ARIDE 6-7

Slide 7.

In addition to alcohol, the CNS Depressants category includes four subcategories:

- Antidepressants (Celexa, Prozac, Paxil)
- Anti-Psychotic Tranquilizers (Thorazine, Haldol)
- Sedative-Hypnotics (Xanax, Valium, Klonopin)
- Other (GHB, Benadryl)

Examples of familiar and often abused depressants include:

- Alcohol
- Ambien (Zolpidem)
- Klonopin (Clonazepam)
- Soma (Carisoprodol)
- Valium (Diazepam)
- Xanax (Alprazolam)

Subjects impaired by depressants may look very much like subjects impaired by alcohol, but without the odor of alcohol on their breath.

Session 6 – Seven Drug Categories

Methods of Administration

- Oral
- Insufflation
- Injection



ARIDE 6-8

Slide 8.

CNS Depressants may be found in pill or liquid form. The most common method for using depressants is to take them orally. Pills may be crushed and insufflated (snorted). Some depressants may be injected.

When CNS depressants (other than alcohol) are taken orally, signs of administration may be difficult to detect.

Injection sites are easily identifiable by swelling of the area and ulcerations of the skin. The injection sites differ from those of other injectable drugs because liquid depressants are generally thicker and require a larger gauge needle to inject the drug.

Session 6 – Seven Drug Categories

Effects of CNS Depressants

- Wide variety of emotional effects
- Divided attention impairment
- Disoriented
- Sluggish
- Thick, slurred speech
- Drunk-like behavior



ARIDE 6-9

Slide 9.

A person impaired by a CNS depressant will look like a drunk, talk like a drunk, walk like a drunk, but they may not smell like a drunk.

Combinations of depressants can be risky; they are commonly combined with alcohol. This increases the effects of the depressant and could magnify the effects and observable signs and symptoms.

Indicators include a wide variety of emotional effects such as euphoria, depression, laughing or crying for no apparent reason, and/or have divided attention impairment. The person impaired may also be disoriented, sluggish, have thick, slurred speech, and/or show drunk-like behavior.

Session 6 – Seven Drug Categories

General Indicators

- Droopy eyelids
- Drowsiness
- Relaxed inhibitions
- Uncoordinated
- Unsteady walk



ARIDE 6-10

Slide 10.

General indicators include droopy eyelids, drowsiness, relaxed inhibitions, uncoordinated, and/or unsteady walk. CNS depressants typically slow the central nervous system and may slow a subject's processing of time.



Eye Indicators

HGN	Present
VGN	May be Present (high dose)
LOC	Present
Pupil Size	Normal*

**Soma, Quaaludes, and some Antidepressants usually dilate pupils*

Slide 11.

Eye indicators for the CNS Depressant category are:

Horizontal Gaze Nystagmus (HGN)	Present
Vertical Gaze Nystagmus (VGN)	May be present (especially at high dose levels for that individual)
Lack of Convergence (LOC)	Present
Pupil Size	Normal (Soma, Quaaludes and certain anti-depressants may dilate)



Onset and Duration of Effects

Type	Onset	Duration
Ambien	Rapid	4 to 5 hours
Klonopin	1 hour	6 to 12 hours
Soma	30 min.	4 to 6 hours
Valium	30 min.	12 to 24 hours
Xanax	10 to 20 min.	6 to 8 hours
GHB	10 to 20 min.	2 to 5 hours
Rohypnol	15 to 20 min.	Up to 12 hours

ARIDE

6-12

Slide 12.

Type	Onset	Duration
Ambien	Rapid	4 to 5 hours
Klonopin	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

Source:

Couper, F., Huestis, M., Fulford, J., Perkinson, N., Miller, S., Katz, A., Symoun, J., Raymond, P., & Smither, D.D. (2023). *Drugs and Human Performance Fact Sheets* [Unpublished manuscript]. National Highway Traffic Safety Administration.

Other Factors: The intensity and level of impairment effects vary depending on drug and dosage amounts, age, weight, and tolerance level. Other variables may dictate the length of actual impairment.

Session 6 – Seven Drug Categories

Overdose Signs and Symptoms

- Clammy skin
- Coma
- Rapid/weak pulse
- Shallow breathing

ARIDE 6-13

Slide 13.

Overdose signs and symptoms include clammy skin, coma, rapid/weak pulse, shallow breathing.

Session 6 – Seven Drug Categories

Conditions That May Mimic Drug Impairment

- Diabetic reactions
- Extreme fatigue
- Head injuries
- Hypotension (low blood pressure)
- Inner ear disorders
- Severe depression

ARIDE 6-14

Slide 14.

Conditions that may mimic drug impairment include extreme fatigue, very recent head injuries, diabetic reactions, hypotension (low blood pressure), inner ear disorders, severe depression.

Session 6 – Seven Drug Categories

Drug Matrix

	CNS Dep.	CNS Stim.	Hall.	D.A.	N.A.	Inhalant	Cannabis
HGN	Present						
VGN	Present						
LOC	Present						
Pupil Size	Normal *						

** Soma, Quaaludes, and some Antidepressants usually dilate pupils*

ARIDE 6-15

Slide 15.

Session 6 – Seven Drug Categories

Seven Drug Categories CNS Stimulants






ARIDE 6-16

Slide 16.

CNS stimulants are drugs that speed up the operation of the CNS. They relieve fatigue, aid in weight reduction, reduce the need for sleep, and/or increase energy and confidence levels. In general, stimulants bring about both a psychological and physical stimulation.

CNS stimulants are commonly known as “uppers” and their effects are similar to the body’s fight or flight responses.

As stimulants “wear off”, the individual can exhibit signs and symptoms similar to those associated with depressants since some of the body’s systems may experience a “crash.” This can also be referred to as the “downside effect”.

Session 6 – Seven Drug Categories

Widely Abused CNS Stimulants

- Cocaine
- Amphetamines
- Methamphetamines



ARIDE 6-17

Slide 17.

The most widely abused CNS stimulants are cocaine, amphetamines, and methamphetamines.

Session 6 – Seven Drug Categories

Cocaine



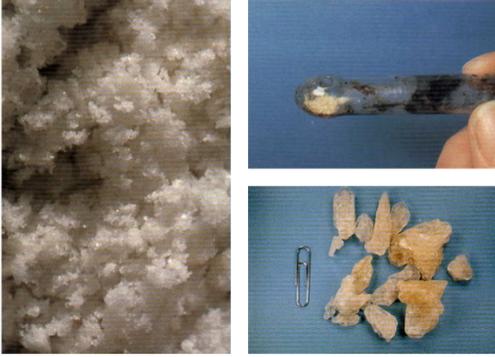
ARIDE 6-18

Slide 18.

Naturally derived CNS stimulants are 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. It appears as small white or off-white chunks. The mixture is cooled and filtered, and then the “rocks” are smoked in a crack pipe.

Session 6 – Seven Drug Categories

Amphetamines



ARIDE 6-19

Slide 19.

Amphetamines are usually found in pill form and are legally manufactured for medical use. Examples include Benzedrine and Adderall.

Methamphetamine is an illicit drug and usually has the consistency of brown sugar and can be a variety of different colors. It is primarily produced illegally.

Session 6 – Seven Drug Categories

Other CNS Stimulants

- Energy drinks
- OTC



ARIDE 6-20

Slide 20.

The 1980's was the start of the energy drink phenomenon, the marketing and use of energy drinks changed dramatically. An energy drink contains 80 mg or more of caffeine. This is more than twice the amount of caffeine found in a 12-ounce can of cola (35 mg), but less than 8 ounces 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.

OTC stimulants are legal CNS stimulants and often used to boost performance, especially among athletes and students. There are many abused OTC stimulants which include ephedra (Ma Huang) and ephedrine. Ma Huang is a Chinese herb that comes from the ephedra bush. The active ingredients are ephedrine (a bronchodilator) and pseudoephedrine (a nasal decongestant). Ephedra and ephedrine are commonly used in many legal OTC medications and diet medications.

Session 6 – Seven Drug Categories

Prescribed CNS Stimulants

- Ritalin
- Adderall
- Dexedrine



ARIDE 6-21

Slide 21.

Ritalin, Adderall, and Dexedrine are also classified as CNS Stimulants. These medications allow an individual with Attention Deficit Hyperactivity Disorder (ADHD) to focus their attention. These medications have recently become commonly abused by students and professionals who want to obtain a temporary increase in their ability to focus and process information.

Session 6 – Seven Drug Categories

Methods of Administration

- Insufflated
- Injected
- Smoked
- Oral



ARIDE 6-22

Slide 22.

There are many types of stimulants and their form will dictate the method of administration. Powder cocaine is typically insufflated but can be injected or smoked.

To be injected it must be converted to a liquid form. Users will heat the powder in distilled water. The chemicals will combine to form the injectable liquid.

Crack cocaine is smoked. Crack cocaine burns very hot, there may be signs of administration in the mouth.

Methamphetamines can be insufflated, smoked, injected, or taken orally.

Ephedrine, pseudoephedrine, Ritalin, Adderall, and Dexedrine are primarily taken orally. Ritalin can also be crushed and insufflated.

Session 6 – Seven Drug Categories

Signs of Administration

- Powder residue in nasal cavity
- Blisters on lips and tongue
- Injection marks



ARIDE 6-23

Slide 23.

When a CNS stimulant is taken orally, signs of administration may be very limited.

When insufflated (as a powder), the nasal tissue may be irritated or inflamed.

When smoked, the intense heat of the smoke may cause burn marks on the fingers (where the pipe was held) and burn marks on the lips (where the pipe touched the mouth).

Injection marks may be observed as a fresh puncture mark with blood oozing, bruising of the vein (caused by damage to the vein itself), or older marks which may have dried blood covering the mark.

Session 6 – Seven Drug Categories

Effects of CNS Stimulants

- Euphoria – an extremely pleasurable sensation (while drug is psychoactive)
- Opposite effect as drug wears off



ARIDE 6-24

Slide 24.

The main effect of most CNS stimulants is euphoria – an extremely pleasurable sensation, while the drug is psychoactive. However, the user may find an opposite effect as the drug wears off. While the drug is psychoactive, the user may seem like their body is sped up or in fast forward, but, as the drug leaves the body (crashing), this person may appear as though they are under the influence of a CNS depressant or narcotic analgesic.

Session 6 – Seven Drug Categories

General Indicators of Impairment

- Eyelid and body tremors
- Grinding teeth (bruxism)
- Restlessness
- Talkative

ARIDE 6-25

Slide 25.

General indicators of CNS stimulant impairment are anxiety, body tremors, dry mouth, euphoria, exaggerated reflexes, excited, eyelid tremors, hyperactivity, grinding teeth (bruxism), increased alertness, insomnia, irritability, redness to nasal area, restlessness, runny nose, and talkativeness. Because CNS stimulants speed up the CNS, the user may exhibit a fast time estimation.

Session 6 – Seven Drug Categories

Eye Indicators

HGN	None
VGN	None
LOC	None
Pupil Size	Dilated

ARIDE 6-26

Slide 26.

Horizontal Gaze Nystagmus (HGN)	None
Vertical Gaze Nystagmus (VGN)	None
Lack of Convergence (LOC)	None
Pupil Size	Dilated

Session 6 – Seven Drug Categories

Duration of Effects

Type	Duration
Cocaine	Up to 2 hours
Amphetamines, Methamphetamines	4 – 8 hours
Ritalin, Adderall, Dexedrine	Varies

ARIDE 6-27

Slide 27.

Type	Duration
Cocaine	Up to 2 hours
Amphetamines, Methamphetamines	4-8 hours
Ritalin, Adderall, Dexedrine	Varies

Source:

Couper, F., Huestis, M., Fulford, J., Perkinson, N., Miller, S., Katz, A., Symoun, J., Raymond, P., & Smither, D.D. (2023). *Drugs and Human Performance Fact Sheets* [Unpublished manuscript]. National Highway Traffic Safety Administration.

Session 6 – Seven Drug Categories

Overdose Signs and Symptoms

- Hallucinations
- Psychosis
- Violent behavior



ARIDE 6-28

Slide 28.

Overdose signs and symptoms of a CNS stimulant may include, but are not limited to hallucinations, psychosis, and violent behavior.

Session 6 – Seven Drug Categories

Conditions That May Mimic Drug Impairment



- Hyperactivity
- Nervousness
- Stress
- Fear

ARIDE 6-29

Slide 29.

There are several conditions that may mimic drug impairment by a CNS stimulant. These may be, but are not limited to hyperactivity, nervousness, stress, and fear.

Session 6 – Seven Drug Categories

Drug Matrix

	CNS Dep.	CNS Stim.	Hall.	D.A.	N.A.	Inhalant	Cannabis
HGN	Present	None					
VGN	Present	None					
LOC	Present	None					
Pupil Size	Normal *	Dilated					

** Soma, Quaaludes, and some Antidepressants usually dilate pupils*

ARIDE 6-30

Slide 30.

Session 6 – Seven Drug Categories

Seven Drug Categories Hallucinogens



ARIDE 6-31

Slide 31.

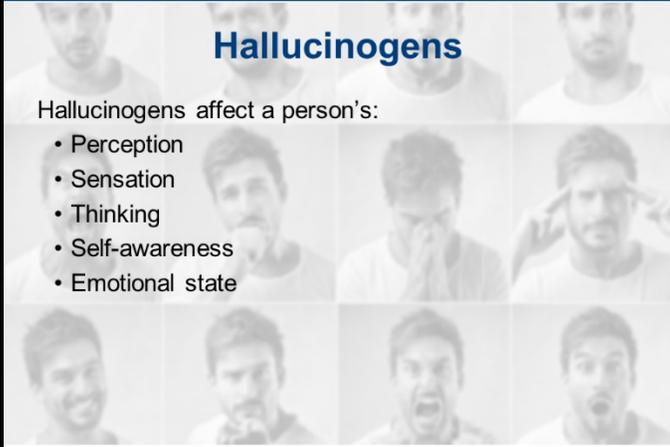
The word “hallucinogen” means something that causes hallucinations. A hallucination is a sensory experience of something that does not exist outside the mind.

Session 6 – Seven Drug Categories

Hallucinogens

Hallucinogens affect a person's:

- Perception
- Sensation
- Thinking
- Self-awareness
- Emotional state



ARIDE 6-32

Slide 32.

Hallucinogens are drugs that affect a person’s perception, sensation, thinking, self-awareness, and emotional state.

Session 6 – Seven Drug Categories

Hallucinogens



- An example of a hallucination would be seeing sounds and hearing colors
- This is called Synesthesia – the transposition of senses

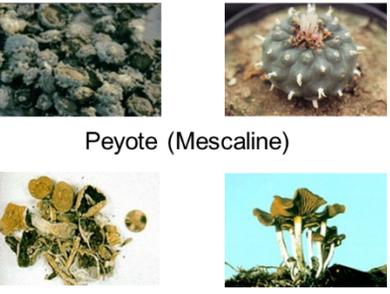
ARIDE 6-33

Slide 33.

The Hallucinogens category is classified in this manner because one of the significant effects of these drugs is hallucinations. An example would be seeing something that does not exist or hearing a color. This is called synesthesia. In its simplest terms, it is the transposition of the senses.

Session 6 – Seven Drug Categories

Natural Hallucinogens



Peyote (Mescaline)

Psilocybin
(Both are grown naturally)

ARIDE 6-34

Slide 34.

Some examples of natural hallucinogens include:

- Peyote, a species of cactus containing mescaline
- Numerous mushrooms (psilocybin) capable of inducing hallucinations
- Jimson weed and morning glory seeds can also be abused, often with tragic consequences
- There is also a toad (*Bufo Alvarius*), which releases a hallucinogenic secretion when threatened

Session 6 – Seven Drug Categories

Synthetic Hallucinogens



ARIDE 6-35

Slide 35.

Hallucinogenic drugs are also synthetically manufactured. Examples include:

- Lysergic Acid Diethylamide (LSD). Liquid LSD can be placed on blotter paper and sold as tabs or it can be absorbed by sugar cubes or other pills.
- 3,4-Methylenedioxymethamphetamine (MDMA) or Ecstasy is an example of a synthetically produced Hallucinogen. MDMA can be found as a pill or as a powder. A pill press can be used to compress the powder into a pill which may contain a variety of different shapes or figures. The use and abuse of Ecstasy has received widespread attention because of its popularity in the “rave scene” and overdose deaths.

Session 6 – Seven Drug Categories

Methods of Administration

- Oral
- Transdermal
- Smoked
- Injected
- Insufflation



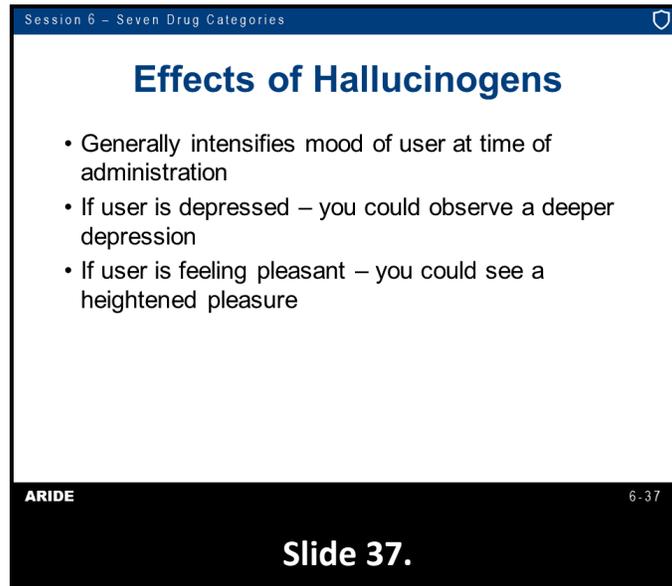
ARIDE 6-36

Slide 36.

Many hallucinogens are taken orally. Substances that are dried and then eaten or brewed as a tea are peyote, psilocybin mushrooms, jimson weed, and morning glory seeds. Ecstasy is usually taken orally.

LSD is absorbed directly either by placing it on the tongue or skin. When a substance is absorbed through the skin it is called transdermal absorption. **Extreme care should be taken when handling suspected LSD blotter paper. LSD can be absorbed through the skin causing unintentional intoxication.**

Additionally, users can consume hallucinogens by smoking, injecting, or insufflation. Since most hallucinogens are taken orally, detecting any signs of administration may be difficult.



The image shows a presentation slide titled "Effects of Hallucinogens". The slide is part of "Session 6 - Seven Drug Categories" and is labeled "ARIDE" and "6-37". The slide content includes a bulleted list of effects: "Generally intensifies mood of user at time of administration", "If user is depressed - you could observe a deeper depression", and "If user is feeling pleasant - you could see a heightened pleasure".

Session 6 - Seven Drug Categories

Effects of Hallucinogens

- Generally intensifies mood of user at time of administration
- If user is depressed – you could observe a deeper depression
- If user is feeling pleasant – you could see a heightened pleasure

ARIDE 6-37

Slide 37.

The user can feel a wide variety of effects when using hallucinogens. The effects depend on the personality and expectations of the individual as well as the surroundings in which the drug is taken. The drug generally intensifies the mood of the user at the time of administration.

If the user is depressed, you could observe a deeper depression. If the user is feeling pleasant, you could see a heightened pleasure.

Session 6 – Seven Drug Categories

Effects of Hallucinogens

- Can uncover emotional flaws in user
- User may expect a pleasurable “trip,” but end up instead with a bad “trip”



ARIDE 6-38

Slide 38.

Hallucinogens can uncover emotional flaws in the user. Therefore, the user may expect a pleasurable “trip” but end up instead with a “bad trip.” “Bad trips” may consist of severe, terrifying thoughts and feelings, fear of losing control, and despair.

Session 6 – Seven Drug Categories

General Indicators

- Body tremors
- Dazed appearance
- Hallucinations
- Impaired perception of time and distance
- Nausea
- Paranoia
- Perspiring
- Uncoordinated

ARIDE 6-39

Slide 39.

Some of the physical, mental, and medical behaviors associated with hallucinogens are:

- Body tremors
- Dazed appearance
- Difficulty with speech
- Disoriented
- Hallucinations
- Impaired perception of time and distance
- Memory Loss
- Nausea
- Paranoia
- Perspiring
- Synesthesia (transposition of the senses)
- Uncoordinated

Hallucinogens cause the user to have an impaired perception of time and can result in difficulty estimating time.

Session 6 – Seven Drug Categories

Eye Indicators

HGN	None
VGN	None
LOC	None
Pupil Size	Dilated

Slide 40.

Horizontal Gaze Nystagmus (HGN)	None
Vertical Gaze Nystagmus (VGN)	None
Lack of Convergence (LOC)	None
Pupil Size	Dilated

Session 6 – Seven Drug Categories

Duration of Effects

Type	Duration
MDMA	1 – 3 hours
LSD	6 – 8 hours
Peyote	Up to 12 hours
Psilocybin	Up to 5 hours

Slide 41.

Type	Duration
MDMA	1 to 3 hours*
LSD	6 to 8 hours*
Peyote	Up to 12 hours
Psilocybin	Up to 5 hours

Source:

Couper, F., Huestis, M., Fulford, J., Perkinson, N., Miller, S., Katz, A., Symoun, J., Raymond, P., & Smither, D.D. (2023). *Drugs and Human Performance Fact Sheets* [Unpublished manuscript]. National Highway Traffic Safety Administration.

Session 6 – Seven Drug Categories

Overdose Signs and Symptoms

The primary overdose symptom for the Hallucinogen category is a long and intense “bad trip”.

ARIDE 6-42

Slide 42.

The primary overdose symptom for the Hallucinogen category is a long and intense “bad trip.”

Session 6 – Seven Drug Categories

Conditions That May Mimic Drug Impairment

- High fever
- Mental illnesses



ARIDE 6-43

Slide 43.

There are two conditions that may mimic impairment by a hallucinogen. These may be but are not limited to high fever and mental illnesses.

Session 6 – Seven Drug Categories

Drug Matrix

	CNS Dep.	CNS Stim.	Hall.	D.A.	N.A.	Inhalant	Cannabis
HGN	Present	None	None				
VGN	Present	None	None				
LOC	Present	None	None				
Pupil Size	Normal *	Dilated	Dilated				

** Soma, Quaaludes, and some Antidepressants usually dilate pupils*

ARIDE 6-44

Slide 44.

Session 6 – Seven Drug Categories

Seven Drug Categories Dissociative Anesthetics




ARIDE 6-45

Slide 45.

The Dissociative Anesthetics category include drugs that inhibit pain by cutting off or disassociating the brain's perception of pain. Symptoms of dissociative anesthetics may be confused with individuals under the influence of hallucinogens, stimulants, and depressants.



Dissociative Anesthetics

- PCP – Phencyclidine
- Analogs
- Ketamine
- Dextromethorphan



ARIDE

6-46

Slide 46.

Phencyclidine, along with its analogs, forms a distinct category all by themselves. The chemical name for PCP is Phenyl Cyclohexyl Piperidine. PCP was originally manufactured as an intravenous anesthetic. It was marketed under the trade name of Sernyl. Although the drug proved to be a very effective anesthetic, it was discontinued for human use in 1967 because of very undesirable side effects.

An analog of a drug is one with a similar chemical composition. Analogs have slightly different chemical structures but produce the same effects.

Ketamine (Ketalar) is an analog of phencyclidine and is still used in pediatric and animal surgery.

DXM is found in over-the-counter antitussive medicines like Robitussin, Coricidin Cough and Cold, and Dimetapp.

Session 6 – Seven Drug Categories

Methods of Administration

- Oral
- Insufflation
- Transdermal
- Eye Drops
- Smoked
- Injection



ARIDE 6-47

Slide 47.

Methods of administration for dissociative anesthetics are:

- Oral
- Insufflation
- Transdermal
- Eye Drops
- Smoked
- Injection

The most common form of administration is smoking in cigars, cigarettes, and marijuana.

Officer safety is important. Numerous incidents have been documented where officers have been exposed to the side effects of the drug.

Session 6 – Seven Drug Categories

Effects of Dissociative Anesthetic

- Cut off or distort the brain's perception of the rest of the body's senses (Dissociate)
- Increase user's pain threshold (Anesthetic)

ARIDE 6-48

Slide 48.

The predominant effect of dissociative anesthetics is the ability to cut off the brain's perception of the rest of the body's senses. This sense is so strong many users feel their head is actually separated from their body. Another, more dangerous, effect of PCP in particular, is the user's increased pain threshold. The user is impervious to the same pain sensations that would typically render an unimpaired person incapacitated. One should be extremely cautious when dealing with an individual impaired by PCP.



General Indicators

- Blank stare
- Cyclic behavior
- Chemical odor
- Hallucinations
- Incomplete verbal responses
- Perspiring
- Slow, slurred speech

ARIDE

6-49

Slide 49.

- Blank stare
- Chemical odor (PCP)
- Confused
- Cyclic behavior (PCP) varying between passive/calm, irritated/agitated, and aggressive/combatative, that tend to increase and decrease cyclically
- Disoriented
- Hallucinations
- Incomplete verbal responses
- Non-communicative
- Perspiring
- Possibly violent
- Sensory distortions
- Slow, slurred speech

Subjects impaired by Dissociative Anesthetics typically have difficulty estimating time.

Session 6 – Seven Drug Categories

Eye Indicators

HGN	Present
VGN	Present
LOC	Present
Pupil Size	Normal

Slide 50.

Horizontal Gaze Nystagmus (HGN)	Present
Vertical Gaze Nystagmus (VGN)	Present
Lack of Convergence (LOC)	Present
Pupil Size	Normal

Session 6 – Seven Drug Categories

Duration of Effects

Type	Duration
DXM	3 – 6 hours
Ketamine	30 – 45 minutes (injected)
	45 – 60 minutes (insufflation)
	1 – 2 hours (orally)
PCP	4 – 6 hours

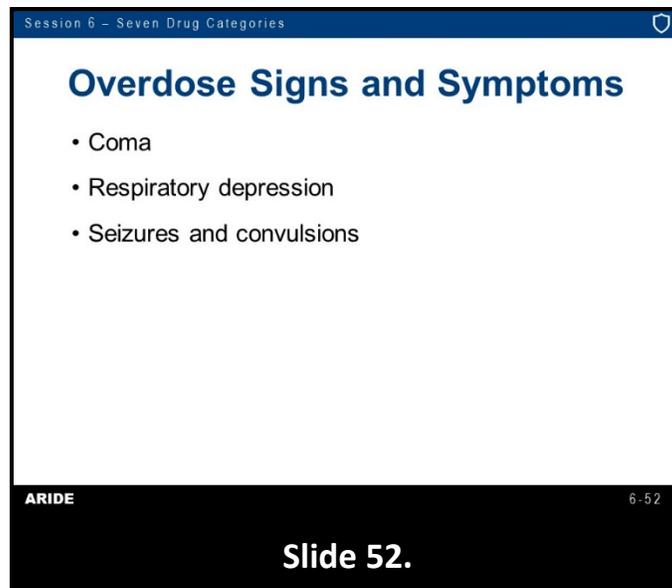
Slide 51.

Type	Duration
DXM	3-6 Hours
Ketamine	30-45 Minutes (injected) 45-60 Minutes (insufflation) 1-2 Hours (orally)
PCP	4-6 Hours

Source:

Couper, F., Huestis, M., Fulford, J., Perkinson, N., Miller, S., Katz, A., Symoun, J., Raymond, P., & Smither, D.D. (2023). *Drugs and Human Performance Fact Sheets* [Unpublished manuscript]. National Highway Traffic Safety Administration.

The duration of general effects may vary according to dose and whether the drug is injected, snorted, smoked, or taken orally. There is often a prolonged recovery period following the dissipation of the general effects.



In addition to the bizarre, violent, and self-destructive behavior discussed previously, persons severely intoxicated by dissociative anesthetics may exhibit definite and extreme symptoms signifying a medically dangerous condition. These symptoms include coma, lasting up to 12 hours and seizures and convulsions. A danger associated with severe dissociative anesthetic intoxication is the person may die due to respiratory depression. There is also some evidence suggesting prolonged use of dissociative anesthetics can lead to psychosis, which can be permanent.



Conditions That May Mimic Drug Impairment

- Mental illnesses



Slide 53.



Drug Matrix

	CNS Dep.	CNS Stim.	Hall.	D.A.	N.A.	Inhalant	Cannabis
HGN	Present	None	None	Present			
VGN	Present	None	None	Present			
LOC	Present	None	None	Present			
Pupil Size	Normal *	Dilated	Dilated	Normal			

** Soma, Quaaludes, and some Antidepressants usually dilate pupils*

Slide 54.

Session 6 – Seven Drug Categories

Seven Drug Categories Narcotic Analgesics



ARIDE 6-55

Slide 55.

Drugs in the Narcotic Analgesics category relieve pain. They induce euphoria, alter moods, and produce sedation. Narcotic analgesics are included in the opiate family and are legal prescription medications as well as illegal drugs. This category is known for its physically addicting properties and severe withdrawal symptoms.

Session 6 – Seven Drug Categories

Identification of Narcotic Analgesics



ARIDE 6-56

Slide 56.

The most familiar narcotic analgesic is heroin. Depending on the purity, heroin may be a white powder to a dark brown powder/tar color.

Other narcotic analgesics include:

- Buprenorphine (Subutex)
- Fentanyl (Actiq, Sublimaze)
- Hydrocodone (Norco, Vicodin, Lortab)
- Morphine (MS Contin)
- Oxycodone (Oxycontin)
- Tylenol 3 (with codeine)

These are prescription drugs and found in pill form. The shape, size, or scoring can depend on the manufacturer or milligram amount. In most cases, narcotic analgesics are obtained in local pharmacies and sold locally. These drugs are inexpensive and frequently prescribed, but nevertheless remain a controlled substance.

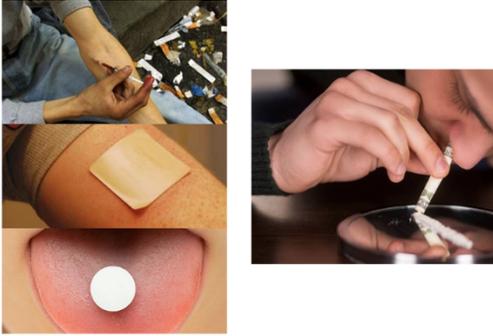


Heroin is the most commonly abused illicit narcotic analgesic.

Heroin was derived from morphine in 1874. Heroin was first thought to be a non-addictive substitute for morphine. It was approved for general use by the American Medical Association in 1906. By the 1920's, it was evident heroin was much more addictive than morphine. Importation and manufacture of heroin has been illegal in this country since 1925. Heroin is a Schedule I drug, which means it has no legitimate medical uses in the United States.

Session 6 – Seven Drug Categories

Methods of Administration



ARIDE 6-58

Slide 58.

Methods of administration vary, depending on the drug used. They may be taken orally in pill form, injected as a liquid, smoked, by insufflation, via suppositories, or transdermal. Most of the prescribed pain relievers are found in the pill form, which will be taken orally. If taken orally, signs of administration may be limited. Heroin that is more pure may be insufflated, while heroin that is less pure is typically injected.

Session 6 – Seven Drug Categories

Effects of Narcotic Analgesics

- Usually very addictive
- Addicts who stop using may suffer physical withdrawal symptoms
- Users may develop a tolerance to the drug

ARIDE 6-59

Slide 59.

Narcotic analgesics are usually very addictive. This means the person must receive a dose of the drug at regular intervals or physical withdrawal may result. Narcotic analgesics also enable the person to develop a tolerance (meaning each time the drug is taken, a larger dose is required to achieve the desired effect) to the drug.

Session 6 – Seven Drug Categories

General Indicators

- Depressed reflexes
- Droopy eyelids
- Drowsiness
- Dry mouth
- Euphoria
- Itching
- Nausea
- “On the nod”
- Puncture marks
- Slow breathing
- Slow, low, raspy speech

ARIDE 6-60

Slide 60.

- Depressed reflexes
- Droopy eyelids
- Drowsiness
- Dry mouth
- Euphoria
- Itching
- Nausea
- “On the nod” (Semiconscious type state of deep relaxation)
- Puncture marks
- Slow breathing
- Slow, low, raspy speech

Session 6 – Seven Drug Categories

Eye Indicators

HGN	None
VGN	None
LOC	None
Pupil Size	Constricted

ARIDE 6-61

Slide 61.

Horizontal Gaze Nystagmus (HGN)	None
Vertical Gaze Nystagmus (VGN)	None
Lack of Convergence (LOC)	None
Pupil Size	Constricted

Session 6 – Seven Drug Categories

Duration of Effects

Type	Duration
Fentanyl	2 – 3 hours
Heroin	3 – 5 hours
Hydrocodone	4 – 8 hours
Methadone	6 – 8 hours
Oxycodone	3 – 6 hours
Vicodin	4 – 8 hours

ARIDE 6-62

Slide 62.

The duration of narcotic analgesics can vary from one type to another. Dosage amounts, age, weight, tolerance, and other variables may dictate the length of actual impairment.

Type	Duration
Fentanyl	2-3 hours
Heroin	3-5 hours
Hydrocodone	4-8 hours (extended release 14-16 hours)
Methadone	6-8 hours
Oxycodone	3-6 hours
Vicodin	4-8 hours

Session 6 – Seven Drug Categories

Overdose Signs

- Clammy skin
- Coma
- Convulsions
- Slow and shallow breathing



ARIDE 6-63

Slide 63.

Overdose signs and symptoms of a narcotic analgesic may include, but are not limited to clammy skin, coma, convulsions, and slow and shallow breathing.

Session 6 – Seven Drug Categories

Conditions That May Mimic Drug Impairment

- Fatigue
- Head injuries
- Diabetic reactions
- Hypotension (low blood pressure)
- Severe depression

ARIDE 6-64

Slide 64.

There are several conditions that may mimic impairment by a narcotic analgesic. These may be, but are not limited to fatigue, head injuries, diabetic reactions, hypotension (low blood pressure), and severe depression.

Session 6 – Seven Drug Categories

Drug Matrix

	CNS Dep.	CNS Stim.	Hall.	D.A.	N.A.	Inhalant	Cannabis
HGN	Present	None	None	Present	None		
VGN	Present	None	None	Present	None		
LOC	Present	None	None	Present	None		
Pupil Size	Normal *	Dilated	Dilated	Normal	Constricted		

** Soma, Quaaludes, and some Antidepressants usually dilate pupils*

ARIDE 6-65

Slide 65.

Session 6 – Seven Drug Categories

Seven Drug Categories Inhalants

ARIDE 6-66

Slide 66.

Inhalants are breathable chemicals that produce mind altering results. They vary widely in terms of the chemicals involved and the specific effects they produce. Inhalants are one of the most accessible and inexpensive substances of abuse due to their legitimate applications. They are relatively inexpensive as well as readily available in the home, school, or work environment.

Session 6 – Seven Drug Categories

Identification of Inhalants

ARIDE 6-67

Slide 67.

There are numerous substances susceptible to inhalant abuse and include a large number of readily available products. A majority of these are not intended by their manufacturers to be used as impairing substances. Some of these include:

- Gasoline
- Paint thinners
- Fingernail polish remover
- Paint (particularly oil or solvent based)
- Various glues
- Hair sprays
- Spray keyboard cleaner
- Freon
- Amyl nitrite
- Nitrous oxide (anesthetic and whipped cream gas)

Session 6 – Seven Drug Categories

Methods of Administration



ARIDE 6-68

Slide 68.

Spray paint and other inhalants can be sprayed into an empty soda can and inhaled through the opening in the top and/or sprayed into a balloon and inhaled. They can also be soaked in a cloth (scrunchies/socks) and placed on the nose/mouth and inhaled. Persons abusing Inhalants will frequently have the abused substance on their hands, face, and/or mouth.

Session 6 – Seven Drug Categories

Effects of Inhalants

- Vary widely depending on the substance inhaled
- Typically, Inhalant abuser will generally appear to be intoxicated on alcohol

ARIDE 6-69

Slide 69.

The effects of inhalants may vary widely depending on the substance inhaled. The inhalant abuser may appear to be intoxicated on alcohol. Inhalant abusers can be detected and distinguished from other drug abusers because they will usually carry a chemical odor of the inhaled substance about their breath and person.

Session 6 – Seven Drug Categories

General Indicators

- Bloodshot eyes
- Confusion
- Disoriented
- Flushed face
- Odor of substance
- Possible nausea
- Residue of substance
- Slurred speech
- Uncoordinated

ARIDE 6-70

Slide 70.

- Bloodshot eyes
- Confused
- Disoriented
- Flushed face
- Odor of inhaled substance
- Possible nausea
- Residue of substance on their person
- Slow, thick, slurred speech

Because Inhalants may cause the user to be confused and disoriented, a subject impaired by an Inhalant may have difficulty estimating time.

Session 6 – Seven Drug Categories

Eye Indicators

HGN	Present
VGN	Present (high doses)
LOC	Present
Pupil Size	Normal (may be dilated)

ARIDE 6-71

Slide 71.

Horizontal Gaze Nystagmus (HGN)	Present
Vertical Gaze Nystagmus (VGN)	Present (High Doses)
Lack of Convergence (LOC)	Present
Pupil Size	Normal (may be dilated)

Session 6 – Seven Drug Categories

Duration of Effects

Type	Duration
Aerosols	Very short duration
Amyl Nitrite	Up to 20 minutes
Nitrous Oxide	Less than 5 minutes
Volatile solvents	Several hours

Slide 72.

Type	Duration
Aerosols	Very short duration
Amyl Nitrite	Up to 20 minutes
Nitrous Oxide	Less than 5 minutes
Volatile solvents	Several hours

Session 6 – Seven Drug Categories

Overdose Signs and Symptoms

- Cardiac arrhythmia
- Sudden sniffing death

Slide 73.

The primary overdose sign for an inhalant is cardiac arrhythmia or “sudden sniffing death.” This is where the individual stops breathing from inhaling a substance. This may occur during the first experience with an inhalant.

Session 6 – Seven Drug Categories

Conditions That May Mimic Drug Impairment

- Head injuries
- Inner ear disorders/Equilibrium



ARIDE 6-74

Slide 74.

There are two conditions that may mimic impairment by an inhalant. These may be, but are not limited to severe head injuries and inner ear disorders/equilibrium.

Session 6 – Seven Drug Categories

Drug Matrix

	CNS Dep.	CNS Stim.	Hall.	D.A.	N.A.	Inhalant	Cannabis
HGN	Present	None	None	Present	None	Present	
VGN	Present	None	None	Present	None	Present	
LOC	Present	None	None	Present	None	Present	
Pupil Size	Normal *	Dilated	Dilated	Normal	Constricted	Normal**	

** Soma, Quaaludes, and some Antidepressants usually dilate pupils*
*** May be dilated*

ARIDE 6-75

Slide 75.

Session 6 – Seven Drug Categories

Seven Drug Categories Cannabis



ARIDE 6-76

Slide 76.

Cannabis is a category of drugs derived primarily from various species of plants, such as cannabis sativa and cannabis indica. Sativa strains tend to be more stimulating and Indica strains tend to be more sedating. Hybrids can be a combination of both.

The drugs in this category are the most widely abused illicit drugs. They can be extremely impairing even though they are often believed to be fairly benign. The primary psychoactive ingredient in cannabis is Delta-9 Tetrahydrocannabinol (THC). THC is found primarily in the leaves and flower of the marijuana plant. Different varieties of cannabis contain various concentrations of THC. Marijuana is usually found as green leaves.

Session 6 – Seven Drug Categories

Forms of Cannabis



Marijuana Hashish

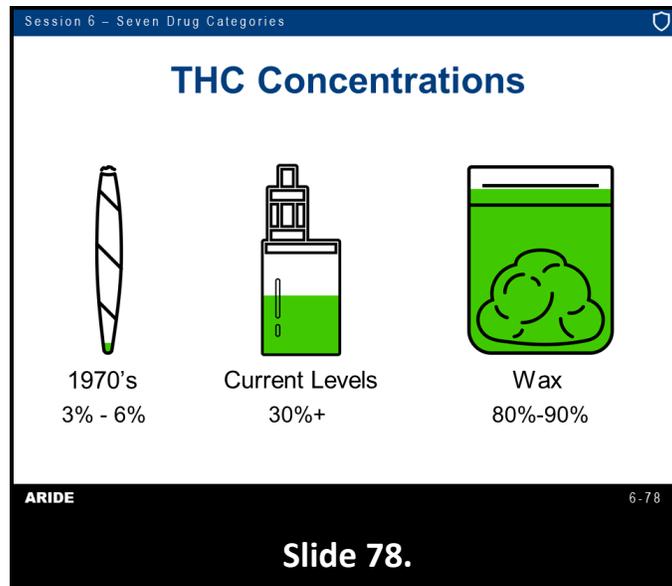
Hash Oil Edibles

ARIDE 6-77

Slide 77.

The cannabis category includes marijuana, hashish, hash oil, synthetic drugs, such as dronabinol and marinol, and other forms of cannabis. Marijuana is the most common and well-known of the drugs in this category, but there are other forms as well.

Though smoking marijuana is the most prevalent method of consumption, edibles are becoming a popular way to consume the drug. Marijuana edibles are more common in States that have legalized marijuana and also States that permit medical marijuana use. The amount of THC is very difficult to measure and is often unknown in these products.



The effects of cannabis depend on the strength of the THC in the dose consumed. THC concentrations decades ago, peaked at relatively low levels (3-6%), however, current levels are being reported at more than 30%. The increase in THC levels is due to hybridization and better cultivation techniques used by producers. There are several chemicals in marijuana smoke. Some of these chemicals are water soluble (meaning they combine with the water) and some are not (THC).

Source:

Couper, F., Huestis, M., Fulford, J., Perkinson, N., Miller, S., Katz, A., Symoun, J., Raymond, P., & Smither, D.D. (2023). *Drugs and Human Performance Fact Sheets* [Unpublished manuscript]. National Highway Traffic Safety Administration.

“Wax” marijuana, “dabs”, and Butane Hash Oil (BHO) are often referred to as marijuana concentrates. Sources indicate, “waxy marijuana or wax marijuana is the purest form of cannabis. It contains anywhere from 82-99% THC making it several times more potent than a marijuana bud on a cannabis plant which usually contains 5-28% THC. One hit of wax is supposedly equal to 1-2 full cannabis joints and is reported as being more clear and longer lasting than average marijuana. Wax marijuana is also a medical marijuana product. Typical wax marijuana is golden in color and crumbly; though texture may vary based on type.”

Source:

Hampton Police Division Crime and Intelligence Analysis Unit. (2013). Subject: Waxy Marijuana. *Intelligence Bulletin, Bulletin: #2013-10.*

Session 6 – Seven Drug Categories

Synthetic Cannabinoid Products

- Olive colored herbs
- Combination of herbs
- Plant materials
- Marinol



ARIDE 6-79

Slide 79.

Synthetic cannabinoid products typically include olive colored herbs, combination of herbs, or plant materials enhanced with a THC synthetic analog. When smoked, synthetic cannabinoid products can produce stimulant and/or hallucinogenic effects. Common brand names for synthetic cannabinoids include K2, Spice, Spice Gold, Spice Diamond, Yucatan fire, Solar Flare, K2 Summit, Genie, PEP Spice, and Fire n Ice to name a few.

Marinol is a synthetic form of cannabis that has a legitimate medicinal use as an anti-vomiting agent. It is commonly associated with cancer chemotherapy. Another use is an appetite enhancer for anorexia disorders.

Session 6 – Seven Drug Categories

Methods of Administration

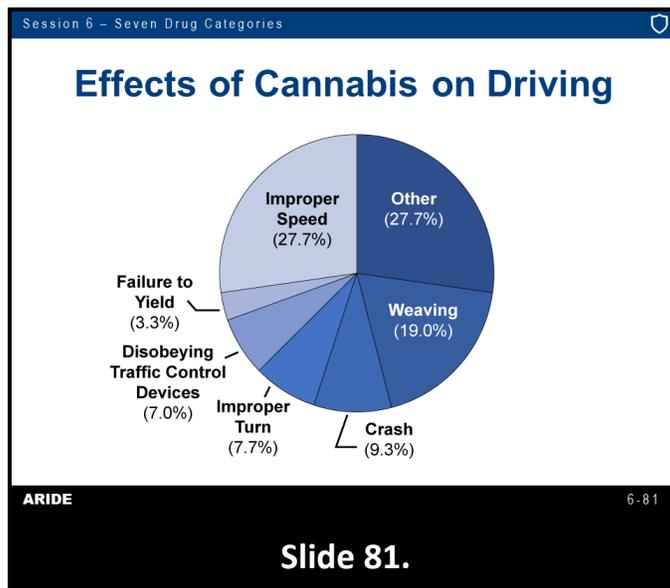
- Smoked
- Oral
- Transdermal



ARIDE 6-80

Slide 80.

Marijuana is usually rolled into cigarettes and smoked. Since these cigarettes lack a filter, small bits and pieces of marijuana may be found stuck between the teeth of the user. Burn marks may be found on the thumb and index finger. The user may also use a “water pipe” or “bong” to smoke marijuana. By passing the marijuana smoke through the water, the smoke is not only more pure but also cooler.



In 72.3% of cases, one or more moving violations were listed as reasons for the traffic stop. Moving violations included improper speed (27.7%), weaving (19.0%); crash (9.3%), improper turn (7.7%), disobeying traffic control devices (7.0%), and failure to yield (3.3%).

Source:

Hartman, R. L., Richman, J. E., Hayes, C. E., & Huestis, M. A. (2016). Drug Recognition Expert (DRE) examination characteristics of cannabis impairment. *Accident Analysis and Prevention, 92*, 219-229. Retrieved from <https://doi.org/10.1016/j.aap.2016.04.012>

People under the influence of cannabis may not be able to pay attention and/or may have a very brief attention span. The subjective effects can vary considerably, but they will exhibit divided attention impairment making them unsafe drivers and could be demonstrated by varying speeds, failing to maintain a single lane, and difficulty with depth perception. Because cannabis impairs attention, divided attention tests like Walk and Turn (WAT), One Leg Stand (OLS), Modified Romberg Balance, and Finger to Nose (FTN) are excellent tools for recognizing people under the influence of cannabis. People under the influence of cannabis may attend to one or a few of these driving tasks, but ignore the other tasks.

According to a study by the British Medical Journal (2005), even small amounts of marijuana can double the chances of a driver’s involvement in a motor vehicle crash and larger doses can more than triple the risk.

According to the Columbia University School of Public Health, the risk of an automobile crash is almost 2.7 times higher among marijuana users than non-users. The more marijuana smoked in terms of frequency and potency, the greater likelihood of a crash.

A study published by the National Institute of Health Public Access (2009) showed the effects of marijuana vary more between the individual than the effects of alcohol. The study also revealed laboratory tests and driving studies show, “Cannabis may acutely impair several driving-related skills in a dose-related fashion but the effects between individuals varies more than they do with alcohol because of tolerance, the difference in smoking techniques and different absorption of THC.”

Session 6 – Seven Drug Categories

General Indicators

- Bloodshot eyes
- Body tremors
- Disoriented
- Euphoria
- Eyelid tremors
- Impaired perception of time and distance
- Odor of marijuana
- Paranoia
- Relaxed inhibitions
- Sedation

ARIDE 6-82

Slide 82.

- Bloodshot eyes
- Body tremors
- Disoriented
- Euphoria
- Eyelid tremors
- Impaired perception of time and distance
- Increased appetite
- Odor of marijuana
- Paranoia
- Relaxed inhibitions
- Sedation

Session 6 – Seven Drug Categories

Eye Indicators

HGN	None
VGN	None
LOC	Present
Pupil Size	Dilated (possibly normal)

ARIDE 6-83

Slide 83.

Horizontal Gaze Nystagmus (HGN)	None
Vertical Gaze Nystagmus (VGN)	None
Lack of Convergence (LOC)	Present
Pupil Size	Dilated (possibly normal)

Session 6 – Seven Drug Categories

Duration of Effects

Type	Duration
Marijuana (smoked)	3-4 hours
Synthetics	2-6 hours
Edibles	Up to 8 hours
Concentrates	Varies

Slide 84.

Effects from smoking cannabis are felt within minutes and reach their peak in 10-30 minutes. Typical marijuana smokers experience a high that lasts approximately 3 hours. Most behavioral and physiological effects return to baseline within 3-4 hours after drug use, although some residual effects in specific behaviors can last up to 24 hours.

Source:

Couper, F., Huestis, M., Fulford, J., Perkinson, N., Miller, S., Katz, A., Symoun, J., Raymond, P., & Smither, D.D. (2023). *Drugs and Human Performance Fact Sheets* [Unpublished manuscript]. National Highway Traffic Safety Administration.

A 1985 Stanford University study showed pilots had difficulty in holding patterns and in lining up with runways for up to 24 hours after using marijuana. Depending on the amount smoked and on the concentration of THC in the marijuana, the person may continue to feel and exhibit the effects for 2 hours. In 1990, a second Stanford University study showed marijuana impaired performance at .25, four, eight, and 24 hours after smoking. While seven of the nine pilots showed some degree of impairment at 24 hours after smoking cannabis, only one reported any awareness of the drug’s effects. The person may feel “normal” within three to five hours after smoking marijuana. The user may be impaired long after the euphoric feelings have ceased.

Dronabinol has an onset of 30 minutes to one hour with peak effects occurring between two and four hours. It can stimulate appetite for up to 24 hours (**depends on substance consumed**).

Session 6 – Seven Drug Categories

Overdose Signs and Symptoms

- Excessive Vomiting
- Possible Psychosis



ARIDE 6-85

Slide 85.

Overdose signs and symptoms of cannabis may include, but are not limited to excessive vomiting and possible psychosis. Cannabis impairment will not be confused with any other medical condition as noted in the other drug categories. However, a person diagnosed with an attention deficit disorder may mimic a cannabis user's inability or unwillingness to pay attention.

Session 6 – Seven Drug Categories

Conditions That May Mimic Drug Impairment

- Mental illnesses

ARIDE 6-86

Slide 86.

High doses of THC and illicit synthetic cannabinoids may cause panic attacks or temporary psychoses that are similar in appearances to mental illnesses.

Session 6 – Seven Drug Categories

Drug Matrix

	CNS Dep.	CNS Stim.	Hall.	D.A.	N.A.	Inhalant	Cannabis
HGN	Present	None	None	Present	None	Present	None
VGN	Present	None	None	Present	None	Present	None
LOC	Present	None	None	Present	None	Present	Present
Pupil Size	Normal *	Dilated	Dilated	Normal	Constricted	Normal**	Dilated***

* *Soma, Quaaludes, and some Antidepressants usually dilate pupils*
 ** *May be dilated*
 *** *May be normal*

ARIDE 6-87

Slide 87.

B. Officer Safety

Session 6 – Seven Drug Categories



Officer Safety

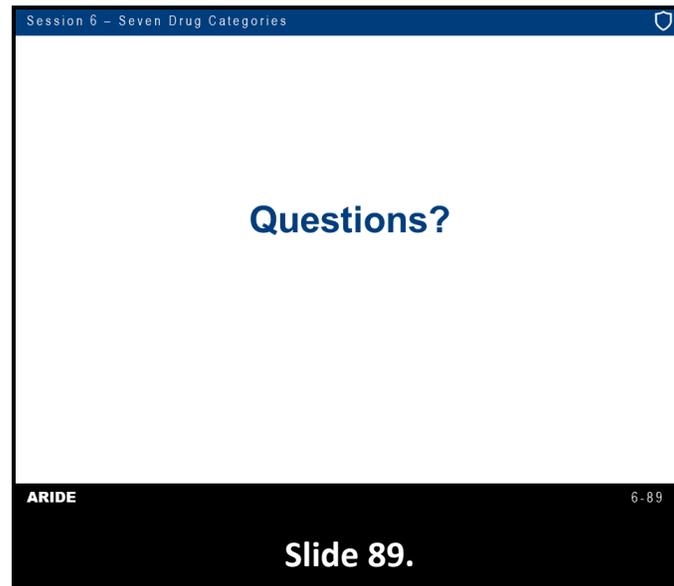


ARIDE 6-88

Slide 88.

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 and drug impairment. It is important for officers 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 office safety.

The International Association of Chiefs of Police (IACP) has a resource entitled, “Improving Officer Response to Persons with Mental Illness and Other Disabilities” that can be accessed at www.theiacp.org. Other recommended web sites and links for further information that may be beneficial for DREs and other police officers include www.samhsa.gov, www.nami.org, www.citinterational.org, www.mentalhealthfirstaid.org/cs, www.ncmhr.org, or www.nasmhpd.org/index.aspx.



Drug Category Matrix

	CNS Depressant	CNS Stimulant	Hallucinogen	Dissociative Anesthetic	Narcotic Analgesic	Inhalant	Cannabis
HGN							
VGN							
LOC							
Pupil Size							

Drug Category Matrix

	CNS Depressant	CNS Stimulant	Hallucinogen	Dissociative Anesthetic	Narcotic Analgesic	Inhalant	Cannabis
HGN	Present	None	None	Present	None	Present	None
VGN	Present	None	None	Present	None	Present	None
LOC	Present	None	None	Present	None	Present	Present
Pupil Size	Normal*	Dilated	Dilated	Normal	Constricted	Normal**	Dilated***

***Soma, Quaaludes, and possibly some Antidepressants usually dilate pupils**

****May be dilated**

*****May be normal**

7 ARIDE

THE EFFECTS OF DRUG COMBINATIONS

LEARNING OBJECTIVES

- Describe the prevalence of drug and alcohol use (individually and in combination) as well as polydrug impairment
- Define polydrug impairment
- Articulate possible effects of polydrug impairment related to indicators of alcohol and drugs

CONTENTS

A. Prevalence of Drug Combinations.....	3
B. Polydrug Impairment.....	4
C. Types of Drug Combinations	5

LEARNING ACTIVITIES

- Instructor-Led Presentation



Session 7

The Effects of Drug Combinations



ARIDE

Slide 1.



Learning Objectives

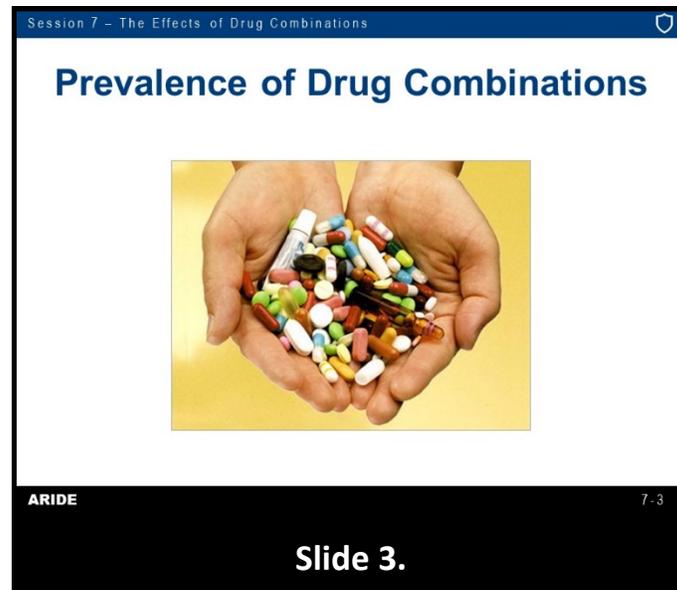
- Describe the prevalence of drug and alcohol use (individually and in combination) as well as polydrug impairment
- Define polydrug impairment
- Articulate possible effects of polydrug impairment related to indicators of alcohol and drugs

ARIDE

7-2

Slide 2.

A. Prevalence of Drug Combinations



In 2020, approximately 16.7 million people aged 12 years or older used psychotherapeutic drugs non-medically in the past year.

Among those aged 12 or older, 59.3 million people used illicit drugs in the past year. The percentage was highest among young adults aged 18 to 25, followed by adults aged 26 or older, then by adolescents aged 12 to 17.

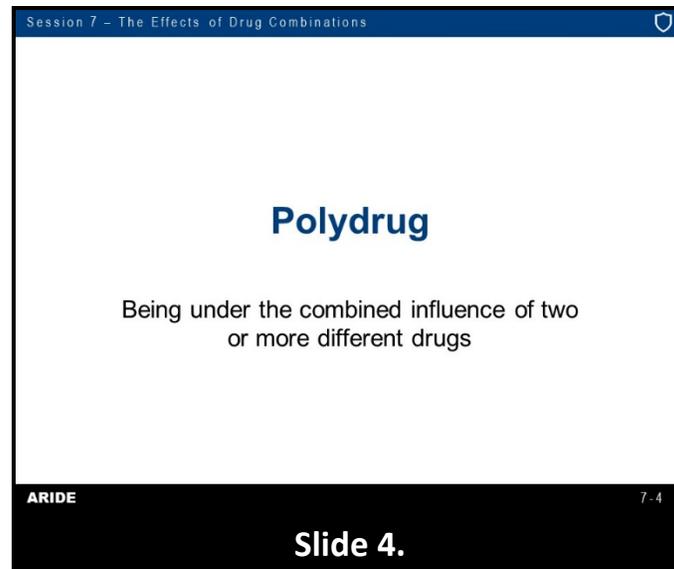
Research has shown alcohol is the most popular "mixer" with other drugs. Cannabis is another popular "mixer" and frequently shows up in combination with Cocaine, Dissociative Anesthetics, and various other drugs. The "speedball", a combination of Cocaine and Heroin, remains popular. Law enforcement officers should not be surprised to encounter virtually any possible combination of drugs. Law enforcement officers may find more polydrug users than single drug users. This means if the law enforcement officer is to do a good job at interpreting the results of observations, they must understand the basic mechanisms of drug interaction.

Source:

Substance Abuse and Mental Health Services Administration. (2021). *Key Substance Use and Mental Health Indicators in the United States: Results from the 2020 National Survey on Drug Use and Health*. (HHS Publication No. PEP21-07-01-003, NSDUH Series H-56). Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. Retrieved from <https://www.samhsa.gov/data/>

This session will help in understanding the effects of polydrug impairment.

B. Polydrug Impairment



Session 7 – The Effects of Drug Combinations

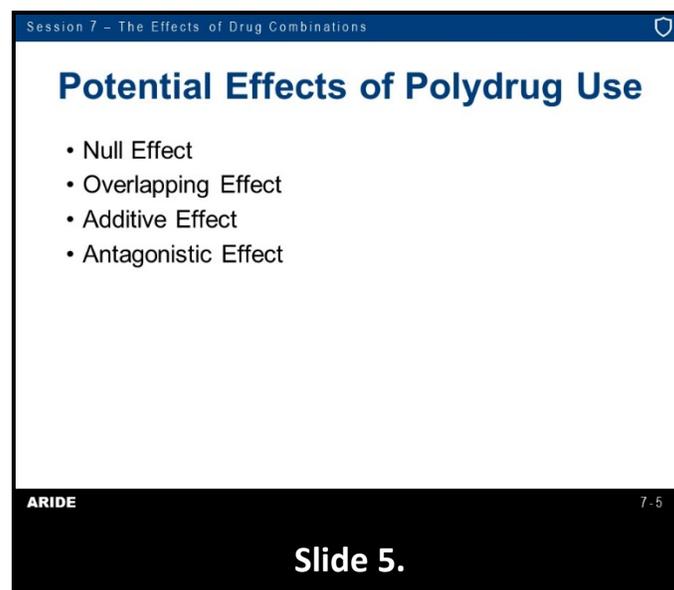
Polydrug

Being under the combined influence of two or more different drugs

ARIDE 7-4

Slide 4.

Polydrug impairment is being under the combined influence of two or more different drugs, which may be in the same or different categories.



Session 7 – The Effects of Drug Combinations

Potential Effects of Polydrug Use

- Null Effect
- Overlapping Effect
- Additive Effect
- Antagonistic Effect

ARIDE 7-5

Slide 5.

Four types of combined effects can, and generally will, occur when two or more drugs are used together:

- Null effect
 - Overlapping effect
 - Additive effect
 - Antagonistic effect
-

C. Types of Drug Combinations

Session 7 – The Effects of Drug Combinations

Null Effect

If neither drug affects some particular indicator of impairment, their combination also will not affect that behavior.

Nothing + Nothing = Nothing

ARIDE 7-6

Slide 6.

The simplest way to explain the null effect is using the phrase “zero plus zero equals zero” or “nothing plus nothing equals nothing.”

Session 7 – The Effects of Drug Combinations

Null Effect Examples

Narcotic Analgesic	CNS Stimulant
Typically cause:	Typically cause:
• HGN - None	• HGN - None
• VGN - None	• VGN - None
• LOC - None	• LOC - None

ARIDE 7-7

Slide 7.

When a subject consumes one drug which does not cause HGN and another drug which does not cause HGN, then the officer should not expect to see HGN. Stimulants and narcotic analgesics do not affect LOC, therefore, the officer should not expect to see LOC with this combination.

Another example of the null effect is the pupil size of a subject who is under the influence of dissociative anesthetics and a CNS depressant. Dissociative anesthetics do not affect pupil size and neither do CNS depressants. The combination of these drugs should not affect the size of the pupils.

If neither drug affects some particular indicator of impairment, then their combination also will not affect that indicator.

Session 7 - The Effects of Drug Combinations

Overlapping Effect

If one drug affects some particular indicator of impairment and another does not, their combination also will affect that behavior.

Action + Nothing = Action

ARIDE 7-8

Slide 8.

The Overlapping Effect occurs when one drug affects an indicator of impairment and the other drug has no effect on that indicator (action plus nothing equals action).

Session 7 – The Effects of Drug Combinations

Overlapping Effect Examples

Narcotic Analgesic	CNS Depressant
Typically cause:	Typically cause:
• HGN - None	• HGN - Present
• VGN - None	• VGN - Possibly Present
• LOC - None	• LOC - Present
• Pupil Size - Constricted	• Pupil Size - Normal

ARIDE 7-9

Slide 9.

Examples:

Narcotic analgesics typically cause:

- HGN - None
- VGN - None
- LOC - None
- Pupil Size - Constricted

CNS depressants typically cause:

- HGN - Present
- VGN - Possibly Present (**VGN is present in high doses**)
- LOC - Present
- Pupil Size - Normal

Session 7 – The Effects of Drug Combinations

Likely Effects of the Combination

- **HGN** - Present
- **VGN** - Possibly Present
- **LOC** - Present
- **Pupil Size** - Constricted

Action
+
Nothing
=
Action

ARIDE 7-10

Slide 10.

The specific combination of a CNS depressant and narcotic analgesic can present four different overlapping effects:

- HGN - Present
- VGN - Possibly Present
- LOC - Present
- Pupil Size - Constricted

Action plus nothing equals action.

Session 7 – The Effects of Drug Combinations

Additive Effect

If both drugs affect some particular indicator of impairment, their combination also will affect that behavior.

Action + Action = Greater Action

ARIDE 7-11

Slide 11.

The additive effect occurs when two drugs affect the same indicator in the same way.

In other words, the effects “add together” or reinforce each other to produce a greater effect than one of the drugs could produce individually (action plus action equals greater action).

An example is if an officer observes general indicators related to a depressant and an inhalant. Both cause HGN and VGN. We might expect to see more clues or more pronounced HGN and/or VGN than we might see with an individual under the influence of either a depressant or an inhalant alone.

The simplest way to explain the additive effect is to say, "action plus action equals greater action."

One thing we can't say for certain is how much the two drugs may reinforce each other.

Sometimes the reinforced effect is as simple as "one plus one equals two," while other drug combinations may produce a combined effect which is greater than the individual combinations of the two drugs "one plus one equals five."

For the purpose of this training, we use the term additive effect to cover all situations where two drugs impact an indicator in the same way.

Session 7 – The Effects of Drug Combinations

Additive Effect Examples

Alcohol	CNS Depressant
<p>Typically cause:</p> <ul style="list-style-type: none"> • HGN - Present • VGN - Possibly present • LOC - Present • Pupil Size - Normal 	<p>Typically cause:</p> <ul style="list-style-type: none"> • HGN - Present • VGN - Possibly Present • LOC - Present • Pupil Size - Normal

ARIDE7-12

Slide 12.

Alcohol typically causes:

- HGN – Present
- VGN – Possibly Present
- LOC – Present
- Pupil Size – Normal

CNS depressants typically cause:

- HGN – Present
- VGN – Possibly Present
- LOC – Present
- Pupil Size – Normal

VGN usually will not be present unless it's a high dose for that individual. The combination may allow the VGN to be observed at a low BAC.

Pupils may be dilated. What you see with HGN usually will not be consistent with the blood alcohol concentration (BAC).

The additive effects may cause the indicators to be exaggerated.

Action + Action = Greater Action

Session 7 – The Effects of Drug Combinations

Antagonistic Effect

When two drugs affect some indicator in opposite ways, their combined effect will be unpredictable.

Action + Opposite Action = Unpredictable

Effects will be dependent on which drug is more dominant in the system at any given time.

ARIDE 7-13

Slide 13.

An antagonistic effect occurs when two drugs affect an indicator in opposite ways.

Session 7 – The Effects of Drug Combinations

Antagonistic Effect Examples

CNS Stimulant	Narcotic Analgesic
Typically cause: <ul style="list-style-type: none"> • HGN - None • VGN - None • LOC - None • Pupil Size - Dilated 	Typically cause: <ul style="list-style-type: none"> • HGN - None • VGN - None • LOC - None • Pupil Size - Constricted

ARIDE 7-14

Slide 14.

For example, stimulant use results in dilated pupils while narcotic analgesics cause the pupils to be constricted. An officer may observe normal, constricted, or dilated pupils due to the antagonistic effect.

When we deal with an antagonistic effect, we cannot always predict the outcome effect. The affects you may see will be dependent on which drug is more dominant in the system at any given time.

For example, if the stimulant is the dominant drug in the system, the pupils may be dilated. If the narcotic analgesic is the more dominant drug, the pupils may be constricted. If the drugs are acting on the system in an equal manner you may see normal pupils.

”Action plus opposite action will be unpredictable”

To illustrate the possible effects of drug combinations, the following examples will show a cumulative drug symptomatology matrix for two different drug combinations.

Session 7 – The Effects of Drug Combinations

Combination Dissociative Anesthetic and Narcotic Analgesic

Impairment Indicators	Effect due to Dissociative Anesthetic	Effect due to Narcotic Analgesic	Type of Combined Effect	Expected Results

ARIDE 7-15

Slide 15.

Session 7 – The Effects of Drug Combinations

Combination Cannabis and Stimulant

Impairment Indicators	Effect due to Cannabis	Effect due to Stimulant	Type of Combined Effect	Expected Results

****May be normal*

ARIDE 7-16

Slide 16.

Session 7 – The Effects of Drug Combinations

Drug Combination Factors

The actual effects can depend on a number of factors including, but not limited to:

- Dose levels
- Time of administration
- An individual's metabolism

ARIDE 7-17

Slide 17.

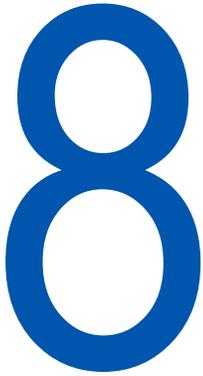
The actual effects can depend on a number of factors including, but not limited to dose levels, time of administration, a subject's metabolism, etc.

Session 7 – The Effects of Drug Combinations

Questions?

ARIDE 7-18

Slide 18.



ARIDE

PRE AND POST ARREST PROCEDURES

LEARNING OBJECTIVES

- Describe the three phases of the DWI detection process: Vehicle in Motion, Personal Contact, and Pre-Arrest Screening
- Describe effective roadside interview techniques
- List the elements of Driving While Under the Influence of Drugs (DUID) offense
- Identify the indicators of impairment observed during the three phases of the detection process
- Accurately document, in the proper even sequence order, observed impairment in each of the three phases of the detection process
- Identify additional resources to support prosecution
- Articulate relevant evidence as it relates to case preparation and prosecution

CONTENTS

A. The DWI Detection Process	3
B. Three Phases of the Detection Process	3
C. Effective Roadside Interview Techniques.....	8
D. Identifying and Documenting Observed Indicators of Impairment	10
E. Case Preparation and Prosecution	12

Learning Activities

- Instructor-Led Presentation
- Participant Practice Session
- Participant Practical Exercise

Session 8 - Pre and Post Arrest Procedures



Session 8

Pre and Post Arrest Procedures



ARIDE

Slide 1.

Session 8 - Pre and Post Arrest Procedures

Learning Objectives

- Describe the Three Phases of DWI Detection Process
- Describe effective roadside interview techniques
- List elements of Driving While Under the Influence of Drugs (DUID) offense
- Identify indicators of impairment during three phases of detection process

ARIDE 8-2

Slide 2.

Session 8 - Pre and Post Arrest Procedures

Learning Objectives

- Accurately document, in sequence, observed impairment in each of the three phases of the detection process
- Identify additional resources to support prosecution
- Articulate relevant evidence as it relates to case preparation and prosecution

ARIDE 8-3

Slide 3.

Although this training is designed to make the participant aware of impairment of drugs, alcohol, or a combination of drugs and alcohol, the mission is also to reinforce skills which were taught in previous trainings dealing with active observation, effective documentation, articulation, and courtroom testimony.

To effectively gather and present the collective evidence as part of a DWI arrest and prosecution, the law enforcement officer, prosecutor, and other supporting professionals must consider information in terms of the totality of the evidence.

A. The DWI Detection Process

Session 8 - Pre and Post Arrest Procedures

DWI Detection

Entire process of identifying and gathering evidence to determine if a subject should be arrested for a DWI violation.



ARIDE 8-4

Slide 4.

DWI detection will be defined as: “The entire process of identifying and gathering evidence to determine if a subject should be arrested for a DWI violation.”

B. Three Phases of the Detection Process

Session 8 - Pre and Post Arrest Procedures

Three Phases



Vehicle in Motion Personal Contact Pre-Arrest Screening

ARIDE 8-5

Slide 5.

We will look at the collection and articulation of evidence in terms of the three phases of DWI detection: Phase One – Vehicle in Motion; Phase Two – Personal Contact; Phase Three - Pre-Arrest Screening.

When does it begin? When the law enforcement officer’s attention is first drawn to a vehicle.

The detection process ends when the officer decides there is or is not sufficient probable cause to arrest the subject for DWI. The officer's attention may be drawn to a particular vehicle or individual for a variety of reasons.

The precipitating event may be a loud noise, an equipment or moving violation, unusual but not necessarily illegal behavior, or almost anything else.

Initial detection may or may not carry with it a suspicion the driver is impaired.

The detection process: Yes - Do it now; Wait - Look for additional evidence; No - Don't do it.

The detection process ends with an arrest or release decision. That decision should ideally be based on the totality of the evidence collected throughout each of the three phases.

However, situations and circumstances may vary in a manner that could preclude the completion of all three phases. Examples of these circumstances would be police pursuits, motorist assists, vehicle crashes, traffic direction, sobriety checkpoints, etc. Law enforcement officers should not leap to the arrest/no arrest decision, but rather proceed carefully through each of the three phases when possible. This process helps to identify all the available evidence needed to make an arrest decision.

Session 8 - Pre and Post Arrest Procedures

Phase One: Vehicle in Motion

- What do you observe?
- What do you do?
- When might Phase One not occur?



ARIDE 8-6

Slide 6.

In Phase One, you usually observe the driver operating the vehicle.

- What do you observe?
- What do you do?

The DWI detection process does not always include all three phases. Sometimes DWI detection occurs when Phase One is absent, such as, cases in which you have no opportunity to observe the vehicle in motion.

Examples include crashes, sobriety checkpoint, and motorist assistance.

Session 8 - Pre and Post Arrest Procedures

Phase Two: Personal Contact

- What do you observe?
- What do you do?
- When might Phase Two not occur?



ARIDE 8-7

Slide 7.

In Phase Two, after you have stopped the vehicle, there usually is an opportunity to observe and speak with the driver face-to-face.

- What do you observe?
- What do you do?

Sometimes there are situations when Phase Two does not occur.

For example, crashes where a driver is transported to a hospital and significant time passes before contact is made by the investigating officer.

Session 8 - Pre and Post Arrest Procedures

Phase Three: Pre-Arrest Screening

- Administer SFSTs and additional ARIDE tests
- Preliminary breath test



ARIDE 8-8

Slide 8.

In Phase Three, you usually have an opportunity to administer the SFSTs and additional ARIDE tests to the driver to evaluate whether there is any degree of impairment. You may, depending upon your agency policies and State laws, administer a preliminary breath test in addition to SFSTs to verify alcohol is or is not the cause or a contributing factor of the impairment.

Session 8 - Pre and Post Arrest Procedures

Each Detection Phase

- Two major tasks
- Each task has one major decision
- Each decision has any one of three outcomes:
 - ✓ Yes – Do it Now
 - ✓ Wait – Look for Additional Evidence
 - ✓ No – Don't Do It

ARIDE 8-9

Slide 9.

Each detection phase usually involves two major tasks and one major decision. Each of the major decisions can have any one of three different outcomes: Yes – Do it Now; Wait – Look for Additional Evidence; No – Don't Do It.

Session 8 - Pre and Post Arrest Procedures

Phase One



ARIDE 8-10

Slide 10.

Phase One – Task One: – Observe the vehicle in motion. **Decision Point:** Is there reasonable suspicion to stop the vehicle?

Phase One – Task Two: Continue to observe the vehicle and the stopping sequence.

Session 8 - Pre and Post Arrest Procedures

Phase Two



ARIDE 8-11

Slide 11.

Phase Two – Task One: Observe and interview the driver face-to-face.

Officers should follow their departmental policy governing traffic stops and investigations.

Decision Point: Should you instruct the driver to exit the vehicle for further investigation?

Phase Two – Task Two: Observe the driver's exit and walk from the vehicle.

Session 8 - Pre and Post Arrest Procedures

Phase Three



ARIDE 8-12

Slide 12.

Phase Three – Task One: Administer SFSTs and ARIDE roadside tests.

Decision Point: Is there sufficient probable cause to arrest the driver for DWI?

Phase Three – Task Two: Task Two - Arrange for or administer a preliminary breath test.

Do the results indicate an alcohol-DWI or a drug-DWI? SFSTs, Other Tests/Observations (MRB, FTN, LOC, pupil size)

Sometimes there are situations when Phase Three does not occur. There are cases in which you would not or could not administer SFSTs to the driver. **This decision is made by the officer and the circumstances.**

Examples include: The driver is impaired to the point they are unable to safely complete the tests; The driver is injured to the extent they are unable to complete the tests; The driver refuses to submit to tests; Circumstances or other conditions that do not allow for the safe administration of SFSTs.

C. Effective Roadside Interview Techniques

Session 8 - Pre and Post Arrest Procedures

Effective Roadside Interview Techniques

- This evidence is critical to successful prosecution of the DWI case
- Necessary to gather valuable information during detection
- Learn and practice effective roadside interview techniques

ARIDE 8-13

Slide 13.

This evidence is critical to successful prosecution of the DWI case. In order for the law enforcement officer to gather valuable information during the detection process, they must learn and practice effective roadside interview techniques.

Session 8 - Pre and Post Arrest Procedures

What You Say

- Word choice
- Communication style
- Tailor questioning speed and tone to the situation and circumstances



ARIDE 8-14

Slide 14.

What you say includes word choice, for example: crash or accident.

You should tailor your word choices to the situation or circumstances that exist at the time.

What you say also includes communication style, for example: The rate of the questioning, tone of your voice.

You should tailor the speed and tone of questioning to the situation and circumstances at the time.

Session 8 - Pre and Post Arrest Procedures

What You Do

- Physical positioning, demeanor
- Goal: encourage cooperation
- Facilitate open dialog
- Develop a good rapport with the subject

ARIDE 8-15

Slide 15.

What you do includes your physical positioning and demeanor. For example, physical positioning is keeping officer safety in mind, avoid an over bearing posture or stance.

Examples of demeanor are maintaining professionalism and facilitating open dialog. Ask questions that will place the driver at ease. **Allow them to talk about themselves. Develop a good rapport with the subject.**

Session 8 - Pre and Post Arrest Procedures

What You See, Smell, Hear



ARIDE 8-16

Slide 16.

What you see can include bloodshot eyes, dilated pupils, muscle tremors, clothing, paraphernalia, etc. What you smell can include alcoholic beverage, chemical odors, marijuana, etc. What you hear can include slurred speech, admissions of drug use, unusual and/or inconsistent statements, drug terminology, etc.

D. Identifying and Documenting Observed Indicators of Impairment

Session 8 - Pre and Post Arrest Procedures

Identifying and Documenting

Detection begins with observation of the vehicle:

- ✓ Document in order of the 3 Phases
- ✓ Document environmental and other conditions



ARIDE 8-17

Slide 17.

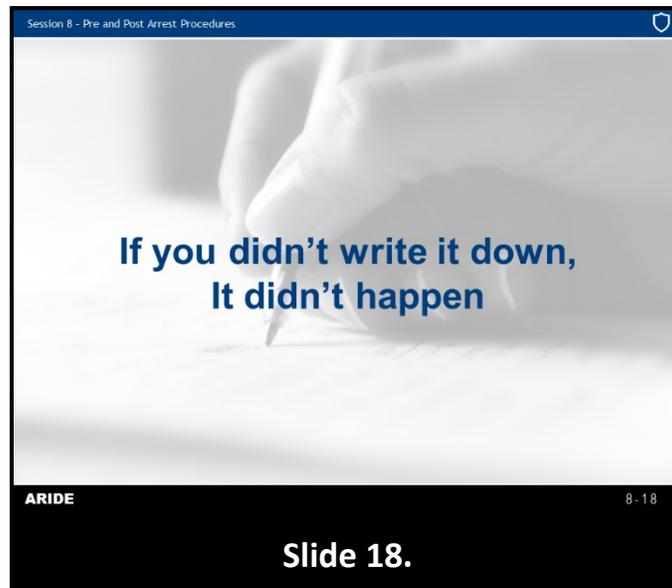
During the detection process, many different situations arise which can affect the identification and documentation of your observations. It is the law enforcement officer's responsibility to conduct a thorough and complete investigation.

Since detection begins with the observation of the vehicle, absent extraordinary conditions, short cuts in the three phases of detection process should not occur. Officers should follow up on all observations that indicate impairment to determine whether impairment is present and if that impairment is due to alcohol, drugs, or a combination of both.

During Phase Two of the detection process, a driver may offer a reason for their behavior or physical appearance.

Examples include, the reason they were weaving was because they were adjusting the radio or using a cell phone, or the reason their eyes are glassy is because they worked a double shift.

At this point you should draw on your training and experience to determine if impairment is present, what is causing the signs you have observed, and is more information needed to make a determination.



Remember: If you don't record the evidence, it didn't happen.

This determination, similar to the decision to arrest, is rarely based on one observation or factor. Rather these decisions are usually based on the totality of the circumstances.

The signs, symptoms, and general indicators discussed during this training are meant to assist law enforcement officers in recognizing impairment based on alcohol, drugs, or a combination of both.

ARIDE training enhances their knowledge about drug-impaired driving, but there is more to learn in order to classify a drug category or categories as the cause of that impairment. Whenever possible, a DRE should be summoned to assist with a drugged-driving investigation to help gather additional evidence to identify the likely drug category(ies) involved. Additionally, this course is intended to assist criminal justice professionals with understanding impairment based on alcohol, drugs, or a combination of both.

The information presented as part of this training is not intended nor meant to equip the officer with the knowledge or ability to categorize the impairment observed with a specific drug category.

In an effort to help the participant learn what types of observations may be important as part of the detection process, we have included an ARIDE Drug Category Matrix which lists many

common indicators of impairment. This matrix is derived from the larger, more detailed DRE Symptomatology Matrix utilized in the DEC Program.

The ARIDE matrix will help the officer organize their observations during the traffic stop. In addition to documenting the indicators, the officer should take care to articulate the circumstances and environment in which the stop was conducted. This descriptive information will *paint a picture* for the prosecutor and the court, thereby presenting the evidence in an effective fashion.

E. Case Preparation and Prosecution

Session 8 - Pre and Post Arrest Procedures

Case Preparation

- Know your Legal Requirements
- Develop Case File
- Don't skip steps
- Know your limitations
- Ask for help

ARIDE 8-19

Slide 19.

Case preparation begins with the first observations of the vehicle during Phase One of the detection process. Although State DWI/DUID statutes are different and the legal requirements necessary to prove each element of the offense differs from State to State, the detection process remains the same. Therefore, regardless of what the statute requires, it is important law enforcement officers understand both the elements of the State statutes and what evidence the prosecution needs to prove each element.

Session 8 - Pre and Post Arrest Procedures

During the Detection Process

- Keep in mind your State legal requirements
- Organize and document observations in terms of the three detection phases
- Successful prosecution for impaired driving begins with building a DWI prosecution team

ARIDE 8-20

Slide 20.

During the detection process, it is critical officers keep in mind the legal requirements of their State. It is equally important the officer organize and document their observations in terms of the three detection phases. By doing this, you will assist the prosecutor in case preparation and presentation in court. A successful prosecution for impaired driving begins with building a DWI prosecution team. The most important part of this process is to remember that it does not matter who leads the effort.

Session 8 - Pre and Post Arrest Procedures

Prosecution Team



ARIDE 8-21

Slide 21.

The most significant benefit of the team is more comprehensive case preparation and a more effective prosecution.

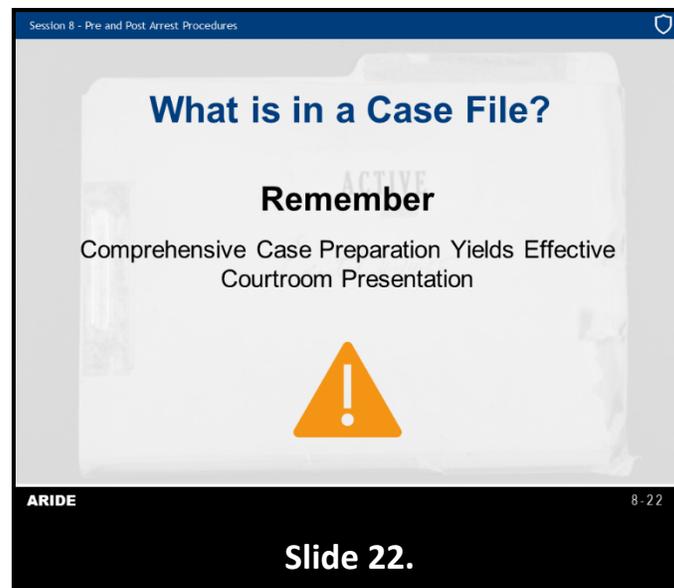
1. What does that mean – DWI prosecution team?
2. Who is on that team?
3. Why isn't the officer's word and observations enough?
4. Doesn't this mean more work?
5. How does this help me do my job?

The foundation for a strong DWI prosecution team is the relationship between the law enforcement officer(s) involved with the arrest and the prosecuting attorney(s) associated with the case. Effective communication and a clear understanding of each group's objectives and expectations is essential to the success of the DWI prosecution team.

Additionally, toxicologists, breath testing professionals, DREs, and other expert witnesses provide specific details that help build the case as well as support the law enforcement officer's testimony during the trial. We often forget about the other potential members of the team who are not directly part of the case preparation.

This section will use the word "process" to describe the sequence of activities and actions which take place during a DWI traffic stop, arrest, and prosecution. This word is not used by accident. It is important for the participants in this training to begin to view DWI enforcement and prosecution as a process which can be continually improved and refined.

It is rational to believe that every DWI traffic stop, arrest, and prosecution are different, but it is also reasonable to assume there are common elements each time an officer encounters an impaired driver and a prosecutor prepares a DWI case. If we can concentrate on common elements and work to optimize how we handle them, then we can be better prepared for court and common defense strategies and challenges. We must work together to utilize this team in order to follow a similar protocol with each case. Remember, **Consistency Yields Reliability**. Throughout this training, we have discussed information in terms of the three phases of DWI detection process.

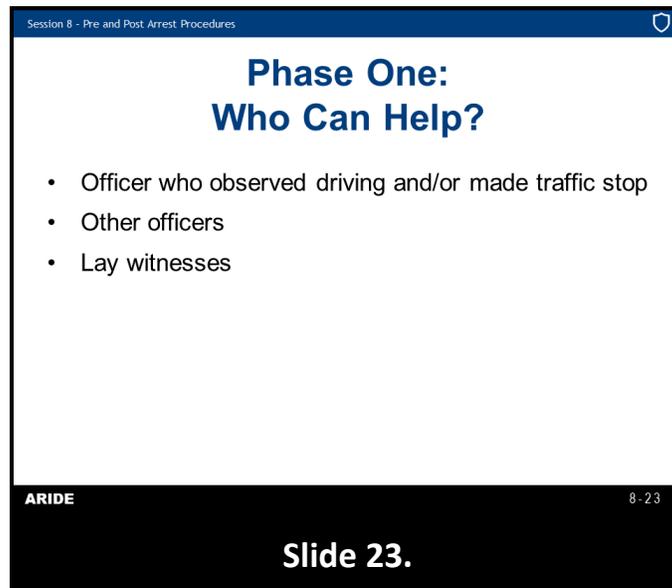


What is a Case File?

Case File: Includes all supporting documentation to justify the stop and the arrest

- All observations and field notes
- Impairment test results
- Chemical test results
- Photos
- Diagrams of the scene
- Videos and audio recordings
- Dispatch logs
- Witness lists
- Statements
- Administrative reports
- Any other relevant evidence

Remember: Comprehensive Case Preparation Yields Effective Courtroom Presentation



Phase One: Vehicle in Motion (Observation of the subject’s driving) – Preparation for trial begins with the first observation of the vehicle in motion, which is usually the first point of attack. In some cases, the reasonable suspicion for the traffic stop may not be associated with driving behavior consistent with the impairment, for example an equipment violation. Therefore, all observations during the vehicle in motion phase should be noted in order to illustrate the environment to the court later.

Potential team members involved at this point may include law enforcement officer who observed the driving and/or made the traffic stop, other law enforcement officers who may have made observations or were called in to assist, and/or lay witnesses, including other people in the vehicle or other motorists.

Law enforcement officers should note every observation made regarding driving. This includes observations before and after you activate your emergency equipment. If there is a crash involved, the officer probably will not actually observe driving. Therefore, witnesses to the crash should be noted to prove specific statutory requirements.



Phase Two: Document Observations

- Note every observation made regarding personal contact
- Include observations before and after subject exits vehicle
- Documenting can reinforce reasonable suspicion for the stop

ARIDE

8-24

Slide 24.

Phase Two: Personal Contact (Observations of the subject after the stop) – Preparation for trial continues with the traffic stop. Observations made before and after the subject exits the vehicle should be documented, for example odor of alcohol, slurred speech, bloodshot, watery eyes, inappropriate responses, and using the vehicle for support during exit and/or while walking. Accurate documentation is essential due to the length of time cases are adjudicated.

Potential team members involved at this point may include law enforcement officer(s) who observed the subject following the traffic stop, other law enforcement officers who may have made observations or were called in to assist, and/or lay witnesses, including other people in the vehicle or other motorist.

Law enforcement officers should note every observation made regarding personal contact. This includes your observations before and after the subject exits the vehicle.

Documenting and articulating these observations can reinforce the reasonable suspicion for the stop.



Phase Three: Thoroughly Document

- HGN, WAT, OLS and other sobriety tests, including associated clues
- Potential team members:
 - Law enforcement officer(s)
 - Lay witnesses

ARIDE

8-25

Slide 25.

Phase Three: Pre-Arrest Screening (Observations of the subject while performing all sobriety tests) – Preparation for trial continues with the officer conducting pre-arrest screening. Observations made during HGN, WAT, OLS and other ARIDE tests, including the associated clues, must be thoroughly documented. For example, during the WAT Test, the subject may not count their steps out loud while walking. This is considered an observation. The subject may start walking before being instructed to do so. This is considered a clue.

Potential team members involved at this point may include law enforcement officer(s) who conducts the field sobriety tests and/or lay witnesses including other people in the vehicle or at the scene.

Law enforcement officers should note every observation made regarding pre-arrest screening.

This includes observations before, during and after the field sobriety tests. Recording and articulating these observations can reinforce the reasonable suspicion for the arrest.

Session 8 - Pre and Post Arrest Procedures

Post Arrest Process Potential Team Members

- Breath testing operators/technical supervisors
- DREs
- Medical personnel
- Jail personnel

ARIDE 8-26

Slide 26.

During post arrest process the team will potentially include breath testing operators/technical supervisors, DREs, medical personnel, and/or jail personnel. **DREs should be utilized whenever available on drug impaired driving cases.** The officer should document what DRE was contacted, when they were contacted, and when they arrived for the evaluation. If a DRE is not available at the time of arrest, they may still be able to become part of the prosecution team.

Session 8 - Pre and Post Arrest Procedures

Pre-Trial Preparation Who Can Help?

- Local Prosecutor
- Toxicologist
- DRE/DRE State Coordinator
- TSRP
- IACP DEC Program Coordinator
- NHTSA/NAPC Prosecutor Fellow
- NTLC

ARIDE 8-27

Slide 27.

For this reason, it remains essential to document, in detail, all observations including those made after arrest.

As preparation for trial begins the team may include:

- Local prosecutor: When possible, at a minimum, the local prosecutor and the arresting officers should meet to discuss the details of the case and determine potential prosecution strategies

- Toxicologist or representative from the appropriate state or contract lab: The toxicologist can be used to corroborate the testimony of the DRE and to bridge the gap between the observations of the arresting officer and the lab report
- DRE Officer/DRE State Coordinator: The DRE/DRE State Coordinator may be able to assist in identifying additional DRE resources
- Traffic Safety Resource Prosecutor (TSRP) (If available): If your state has a TSRP they can be utilized as a resource to assist both prosecutors and law enforcement
- International Association of Chiefs of Police (IACP) DEC Program Regional Coordinator
- National Highway Traffic Safety Administration (NHTSA)/National Association of Prosecutor Coordinators (NAPC) Prosecutor Fellow
- National Traffic Law Center (NTLC)

Session 8 - Pre and Post Arrest Procedures

Pre-Trial

- Review your case file
- Meet with prosecutor
- Anticipate defense
- Develop visual aids
- Other



ARIDE 8-28

Slide 28.

As preparation for trial begins, remember to review your case file. Meet with the prosecutor, anticipate the defense, develop visual aids, etc. Visual Aids include pictures of the location, location of stop, appearance of defendant, videos of the performance on the SFSTs, charts, diagrams, etc.

Session 8 - Pre and Post Arrest Procedures

Trial



ARIDE 8-29

Slide 29.

At trial, it is imperative the prosecutor, arresting officer, DRE (if applicable), toxicologist and any other witness avoid using legal, law enforcement, or medical-specific language. The use of plain English assists the judge, jury, and others who are involved in the case to understand the specifics of all testimony.

The team must work together to illustrate the entire process. Visual aids should be used to illustrate the location of the stop, physical appearance of defendant, and/or performance on the field sobriety tests. Visual aids may also assist in explaining the officer's training and experience, factual concepts, and/or the legal elements of the offense. Visual aids engage the judge/jury and increase retention of information.

From the time of the traffic stop, through the post arrest process, and until after the case is adjudicated the team must remain consistent. The prosecutor may be added to the team at any time. Ideally, the prosecutor would be on board immediately, especially in the case of serious injury or fatal crashes.

Other items to remember for direct examination are to listen carefully to questions, think before you answer, ask for clarity if needed, relate training and experience, and talk to your audience.

During cross examination, remember to be professional and answer only questions asked. If you don't know the answer, say so. For example you can say, I do not know, I do not recall, or I cannot answer that question without explanation.

Session 8 - Pre and Post Arrest Procedures

Are you prepared?



ARIDE 8-30

Slide 30.

Remember: There is no substitute for preparation.

Session 8 - Pre and Post Arrest Procedures

Questions?

ARIDE 8-31

Slide 31.

9

ARIDE

WRITTEN EXAMINATION AND PROGRAM CONCLUSION

LEARNING OBJECTIVES

- Complete a written examination with a passing grade
- Provide comments and suggestions for improving the training

CONTENTS

A. Post Test.....	3
B. Critique.....	3
C. Review of Post Test	4

LEARNING ACTIVITIES

- Written Participant Examination
- Written Participant Critique
- Instructor-Led Presentation



Session 9

Written Examination and Program Conclusion



ARIDE

Slide 1.



Learning Objectives

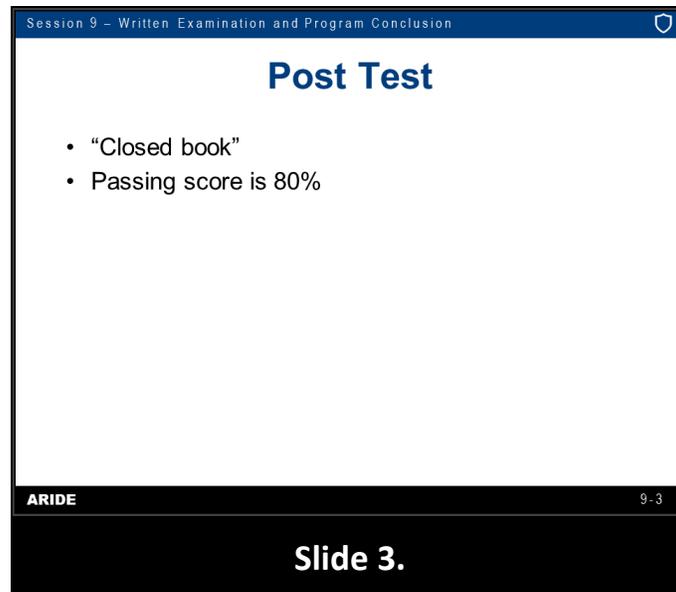
- Complete written examination with passing grade
- Provide comments and suggestions for improving training

ARIDE

9-2

Slide 2.

A. Post Test



Session 9 – Written Examination and Program Conclusion

Post Test

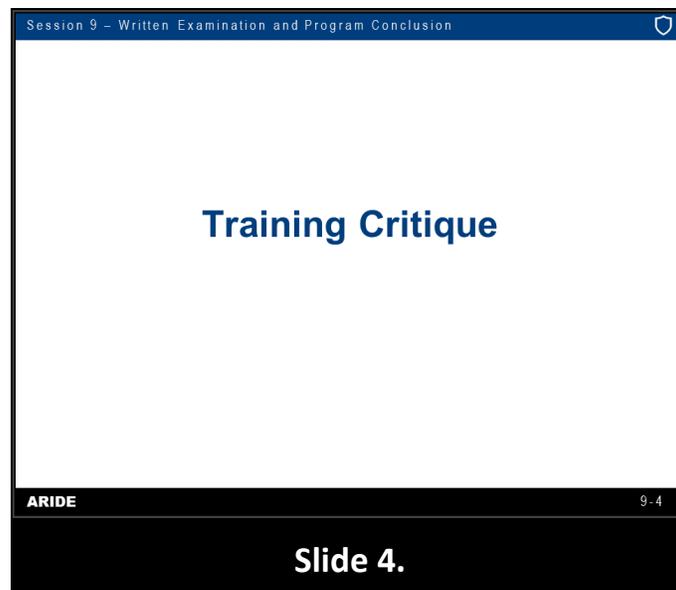
- “Closed book”
- Passing score is 80%

ARIDE 9-3

Slide 3.

Purpose of the Post Test: To compare with pretest and determine extent of knowledge gained by participants.

B. Critique



Session 9 – Written Examination and Program Conclusion

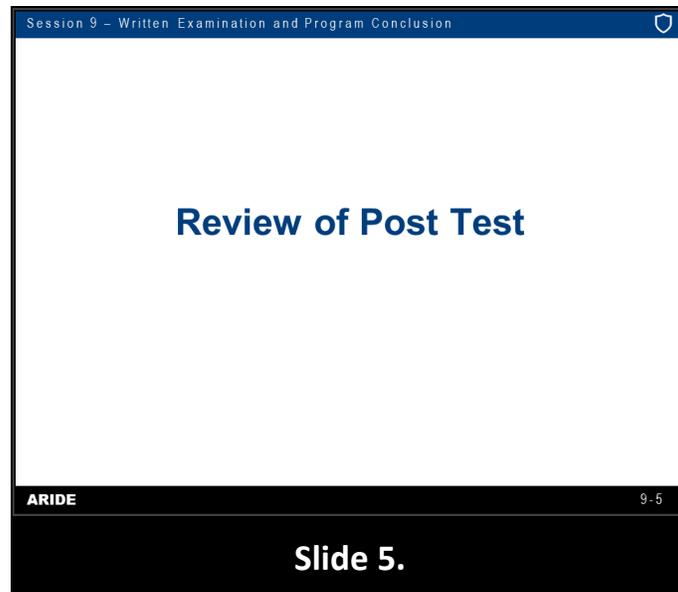
Training Critique

ARIDE 9-4

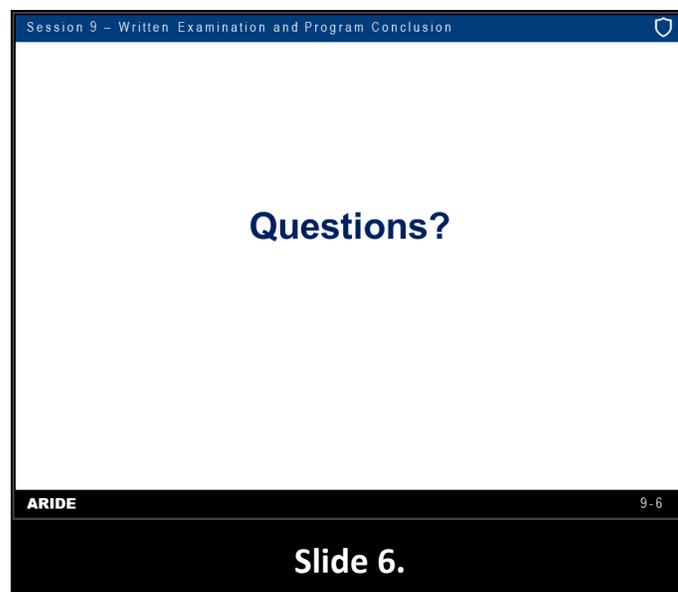
Slide 4.

Purpose of the critique form: To identify possible improvements that can and should be made to this program.

C. Review of Post Test



If a passing score of 80% is not achieved, participant(s) will need to retake the entire course.



ARIDE Training Critique

For items 1-6, please select your level of agreement with the following statements. Include any additional information in the space provided.

Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I was prepared for the SFST proficiency requirements associated with this training. Comments: <hr/> <hr/>	0	0	0	0	0
2. The specific information provided in the seven drug categories (signs and symptoms) was sufficient to effectively understand how different drugs may affect individuals especially while driving. Comments: <hr/> <hr/>	0	0	0	0	0
3. Based on the classroom content, I feel confident to conduct an effective roadside assessment of a suspected impaired driver. Comments: <hr/> <hr/>	0	0	0	0	0
4. Based on the classroom content, I feel confident that I can identify general indicators associated with a suspected impaired driver. Comments: <hr/> <hr/>	0	0	0	0	0
5. Overall, the ARIDE training provided me with information which is immediately applicable to my job. Comments: <hr/> <hr/>	0	0	0	0	0
6. Upon completing the training, I can effectively communicate (in writing and in a courtroom setting) my observations associated with a driver who I suspect is impaired by alcohol, drugs, or a combination of both. Comments: <hr/> <hr/>	0	0	0	0	0

Please rate how helpful each workshop session was for you personally.

Item	Poor	Fair	Good	Very Good	Excellent
Introduction and Overview “Drugs and Highway Safety”	0	0	0	0	0
Standardized Field Sobriety Testing Review	0	0	0	0	0
Standardized Field Sobriety Testing Proficiency Examination	0	0	0	0	0
Drugs in the Human Body	0	0	0	0	0
Observation of the Eyes and Additional Tests for Drug Impairment	0	0	0	0	0
Seven Drug Categories	0	0	0	0	0
The Effects of Drug Combinations	0	0	0	0	0
Pre and Post Arrest Procedures	0	0	0	0	0

Please mark the appropriate word to indicate your agreement or disagreement with each of the following statements.

Item	Agree	Disagree	Not Sure
The program contains some information that is not needed and that should be deleted.	0	0	0
There are some important topics missing from the program that should be added.	0	0	0
The program is too short.	0	0	0
I feel this program has improved my own ability to enforce DWI laws.	0	0	0
The instructors did a good job.	0	0	0
I am very glad I attended the program.	0	0	0
The program is too long.	0	0	0
The instructors should have been better prepared.	0	0	0
I feel fully qualified to use HGN now.	0	0	0
I feel fully qualified to use the two divided attention tests now.	0	0	0

If you absolutely had to delete one session or topic from this training, what would it be?

If you could add one new topic or session to this training, what would it be?

	Poor	Fair	Good	Very Good	Excellent
Please rate the overall quality of the training.	○	○	○	○	○

Please rate your instructors for this training. Rate the instructor(s) by selecting the appropriate response:

Instructor	Poor	Below Average	Average	Above Average	Excellent
Name:	○	○	○	○	○
Comments:					
Name:	○	○	○	○	○
Comments:					
Name:	○	○	○	○	○
Comments:					
Name:	○	○	○	○	○
Comments:					
Name:	○	○	○	○	○
Comments:					

Name (optional): _____

References

- Berning, A., Compton, R., & Wochinger, K. (2015). *Results of the 2013–2014 National Roadside Survey of Alcohol and Drug Use by Drivers*. (Traffic Safety Facts Research Note. Report No. DOT HS 812 118). Washington, DC: National Highway Traffic Safety Administration.
- Britannica, T. Editors of Encyclopaedia. (2020, May 27). *homeostasis*. Retrieved from Encyclopedia Britannica: <https://www.britannica.com/science/homeostasis>
- Burns, M., & Anderson, E. W. (1995). *A Colorado Validation Study of the Standardized Field Sobriety Test (SFST) Battery*. Colorado Department of Transportation .
- Citek, K. (2014). *Eye Tests on Suspect with a "Blind" Eye*. Pacific University College of Optometry.
- Couper, F., Huestis, M., Fulford, J., Perkinson, N., Miller, S., Katz, A., Symoun, J., Raymond, P., & Smither, D.D. (2023). *Drugs and Human Performance Fact Sheets* [Unpublished manuscript]. National Highway Traffic Safety Administration.
- Hampton Police Division Crime and Intelligence Analysis Unit. (2013). Subject: Waxy Marijuana. *Intelligence Bulletin, Bulletin: #2013-10*.
- Hartman, R. L., Richman, J. E., Hayes, C. E., & Huestis, M. A. (2016). Drug Recognition Expert (DRE) examination characteristics of cannabis impairment. *Accident Analysis and Prevention, 92*, 219-229. Retrieved from <https://doi.org/10.1016/j.aap.2016.04.012>
- Leigh, R. J., & Zee, D. S. (2015). A Survey of Eye Movements: Characteristics and Teleology. In R. J. Leigh, & D. S. Zee, *The Neurology of Eye Movements* (5th ed., p. 12ff). Online: Oxford University Press. doi:10.1093/med/9780199969289.001.0001
- National Institute of Mental Health. (2018, July). *Anxiety Disorders*. Retrieved March 30, 2022, from National Institute of Mental Health: <https://www.nimh.nih.gov/health/topics/anxiety-disorders>
- National Institute of Mental Health. (2018, February). *Depression*. Retrieved March 30, 2022, from National Institute of Mental Health: <https://www.nimh.nih.gov/health/topics/depression>
- National Institute of Mental Health. (2020, January). *Bipolar Disorder*. Retrieved March 30, 2022, from National Institute of Mental Health: <https://www.nimh.nih.gov/health/topics/bipolar-disorder>
- National Institute of Mental Health. (2020, May). *Schizophrenia*. Retrieved March 30, 2022, from National Institute of Mental Health: <https://www.nimh.nih.gov/health/topics/schizophrenia>
- Stuster, J., & Burns, M. (1998). *Validation of the Standardized Field Sobriety Test Battery at BACs Below 0.10 Percent*. Santa Barbara, CA: Anacapa Sciences, Inc.

Substance Abuse and Mental Health Services Administration. (2018). *Key substance use and mental health indicators in the United States: Results from the 2017 National Survey on Drug Use and Health* . (HHS Publication No. SMA 18-5068, NSDUH Series H-53). Rockville, MD:: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. Retrieved from Retrieved from <https://www.samhsa.gov/data/>

Substance Abuse and Mental Health Services Administration. (2021). *Key Substance Use and Mental Health Indicators in the United States: Results from the 2020 National Survey on Drug Use and Health*. (HHS Publication No. PEP21-07-01-003, NSDUH Series H-56). Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. Retrieved from <https://www.samhsa.gov/data/>