1 Hour and 15 Minutes

SESSION VII

OVERVIEW OF SIGNS AND SYMPTOMS

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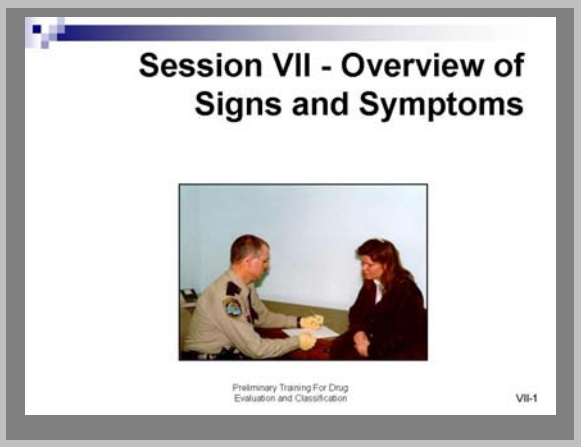
Upon successfully completing this session the student will be able to:

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

CONTENT SEGMENTS	LEARNING ACTIVITIES
A. CNS Depressants	▪ Interactive Discussions
B. CNS Stimulants	
C. Hallucinogens	
D. Dissociative Anesthetics	
E. Narcotic Analgesics	
F. Inhalants	
G. Cannabis	
H. Wrap-Up	

I. OVERVIEW OF SIGNS AND SYMPTOMS

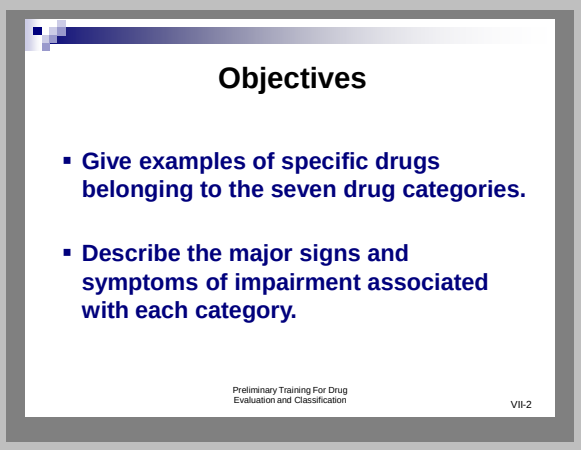
Display Slide VII-1: Overview of Signs and Symptoms



Briefly review the objectives, content and activities of this session.

Objectives

Display Slide VII-2: Objectives



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

- Frequently, the term "objective symptoms" is used in law enforcement to refer to "signs."

A. CNS Depressants

Prior to the start of this session, draw the matrix found at the end of this session on the dry erase board or flip-chart.

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

- Ask students to name some examples of CNS Depressants. Make sure that the examples given include alcohol, some barbiturates and some tranquilizers.

Indicators of CNS Depressant Influence Found in Eye Exams

Ask students: "Do depressants cause Horizontal Gaze Nystagmus?"

- HGN usually will be present.

Write "Present" on the HGN line for Depressants.

Ask: "Do Depressants cause Vertical Gaze Nystagmus?"

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

Write "Present" on the VERT NYST line for Depressants. Denote in parentheses above "(High Doses)."

Ask: "Do Depressants cause the eyes to be unable to converge?"

- Under the influence of Depressants, Lack of Convergence usually will be present.

Write "Present" on the LACK CONV line for Depressants.

Ask: "How do Depressants affect pupil size?"

- Depressants usually do not affect pupil size; therefore, Depressants usually leave the pupils near normal in size.

Write “Normal” on the PUPIL SIZE line for Depressants.

But some specific Depressant drugs do affect pupil size.

Ask: “What are the Depressants that affect pupil size?”

- Soma, Methaqualone (Quaaludes) and some anti-depressants usually dilate pupils.

Put a (1) next to “Normal” and write “Soma, Quaaludes and some anti-depressants usually dilate.”

- Depressants generally will cause pupillary reaction to light to be sluggish.

Write “Slow” on the RCTN LIGHT line for Depressants.

Indicators of CNS Depressant Influence Found in Checks of the Vital Signs

Ask: “How do Depressants affect pulse rate?”

- Depressants usually lower pulse rate.

Write “Down” on the PULSE line for Depressants.

But some specific Depressant drugs may elevate the pulse.

Ask: “What are the Depressants that may elevate pulse rate?”

- Methaqualone (Quaaludes), alcohol and possibly some anti-depressants may cause elevation in pulse rate.

Put a (2) next to “Down” and write “Quaaludes, ETOH and possibly some anti-depressants may elevate” in the Matrix.

Ask: “How do Depressants affect blood pressure?”

- Depressants usually lower blood pressure.

Ask: "How do Depressants affect body temperature?"

- Depressants usually leave temperature near normal.

Write "Normal" on the TEMP line for Depressants.

Solicit students' questions about CNS Depressants.

Ask: "How do Depressants affect muscle tone?"

- Depressants usually cause flaccid muscle tone.

Write "Flaccid" on the MUSCLE TONE line for Depressants.

B. CNS Stimulants

The category called Central Nervous System Stimulants includes many drugs.

Ask students to name some examples of CNS Stimulants. Make sure the examples include cocaine and some amphetamines.

Indicators of CNS Stimulant Influence Found in Eye Exams

Ask students: "Do CNS Stimulants cause Horizontal Gaze Nystagmus?"

- HGN will not be present.

Write "None" on the HGN line for CNS Stimulants.

Ask: "Do CNS Stimulants cause Vertical Gaze Nystagmus?"

- Vertical Gaze Nystagmus will not be present.

Write "None" on the VERT NYST line for CNS Stimulants.

Ask: "Do CNS Stimulants cause the eyes to be unable to converge?"

- Under the influence of CNS Stimulants, the eyes should still be able to converge; therefore, lack of convergence will not be present.

Ask: "How do CNS Stimulants affect pupil size?"

Write "None" on the LACK CONV line for CNS Stimulants.

- CNS Stimulants usually cause the pupils to dilate.

Write "Dilated" on the PUPIL SIZE line for CNS Stimulants.

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

Write "Slow" on the RCTN LIGHT line for CNS Stimulants.

Indicators of CNS Stimulant Influence Found in Checks of Vital Signs

Ask: "How do CNS Stimulants affect pulse rate?"

- CNS Stimulants usually increase pulse rate.

Write "Up" on the PULSE line for CNS Stimulants.

Ask: "How do CNS Stimulants affect blood pressure?"

- CNS Stimulants usually increase blood pressure.

Write "Up" on the BLOOD PRESS line for CNS Stimulants.

Ask: "How do CNS Stimulants affect body temperature?"

- CNS Stimulants usually elevate body temperature.

Ask: "How do CNS Stimulants affect muscle tone?"

Write "Up" on the TEMP line for CNS Stimulants.

- CNS Stimulants usually cause a rigid muscle tone.

Write "Rigid" on the MUSCLE TONE line for CNS Stimulants.

Though not directly related to the vital signs, the evaluator may find the subject's muscle tone to be rigid with possible body tremors. A grinding of the teeth, referred to as "bruxism" may also be noticed.

Point out that, as show on the matrix, the signs of Stimulant influence are almost exactly opposite to the signs of Depressant influence.

Solicit students' questions about CNS Stimulants.

C. Hallucinogens

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

Ask students to name some hallucinogenic drugs. Make sure the examples include some natural Hallucinogens as well as some synthetics.

Indicators of Hallucinogen Influence Found in Eye Exams

Ask students: "Do Hallucinogens cause Horizontal Gaze Nystagmus?"

- HGN will not be present.

Write "None" on the HGN line for Hallucinogens.

Ask: "Do Hallucinogens cause Vertical Gaze Nystagmus?"

- Vertical Gaze Nystagmus will not be present.

Write "None" on the VERT NYST line for Hallucinogens.

Ask: "Do Hallucinogens cause the eyes to be unable to converge?"

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

Write "None" on the LACK CONV line for Hallucinogens.

Ask: "How do Hallucinogens affect pupil size?"

- Hallucinogens usually cause the pupils to dilate.

Write "Dilated" on the PUPIL SIZE line for Hallucinogens.

- Normally, Hallucinogens do not effect pupillary reaction to light.

Write "Normal" on the RCTN LIGHT line for Hallucinogens.

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

Put a (3) next to "Normal" and write "certain psychedelic amphetamines may cause slowing" in the Matrix.

Indicators of Hallucinogen Influence Found in Checks of Vital Signs

Ask: "How do Hallucinogens affect pulse rate?"

- Hallucinogens usually increase pulse rate.

Write "Up" on the PULSE line for Hallucinogens.

Ask: "How do Hallucinogens affect blood pressure?"

- Hallucinogens usually increase blood pressure.

Write "Up" on the BLOOD PRESS line for Hallucinogens.

Ask: "How do Hallucinogens affect body temperature?"

- Hallucinogens usually elevate body temperature.

Write "Up" on the TEMP line for Hallucinogens.

Ask: "How do Hallucinogens affect muscle tone?

- Hallucinogens usually cause a rigid muscle tone.

Write "Rigid" on the MUSCLE TONE line for Hallucinogens.

Point out that, as shown on the matrix, the major signs of Hallucinogen influence are identical to the major signs of Stimulant influence.

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

Point out that, in the seven day DRE School, the students will learn of more subtle indicators that help to distinguish Hallucinogen influence from Stimulant influence. But emphasize that it is often difficult to distinguish between these two categories.

Solicit students' questions about Hallucinogens.

D. Dissociative Anesthetics

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

Ask students: "What does 'analog' mean in this context?"

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

Write "Ketamine: An analog of PCP" on the dry erase board or flip-chart.

One of the most popular analogs of PCP is the drug called Ketamine.
Ketamine is a legally manufactured (but controlled) drug that is used as an anesthetic in some surgical applications.

Some other analogs of PCP include Ketalar, Ketaset, and Ketajet.

Dextromethorphan is a drug found in numerous over-the-counter substances.

- Point out that Dextromethorphan, also known as DXM is a widely abused substance and is easy to obtain.

Indicators of the Dissociative Anesthetics Found in Eye Exams

Ask students: "Do Dissociative Anesthetics cause Horizontal Gaze Nystagmus?"

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

Write "Present" on the HGN line for Dissociative Anesthetics.

INSTRUCTOR NOTE: Both HGN and VGN were noted in various DRE evaluations conducted on persons impaired by DXM. Research has also confirmed HGN in persons impaired by DXM.

Ask: "Do Dissociative Anesthetics cause Vertical Gaze Nystagmus?"

- Vertical Gaze Nystagmus usually will be present.

Write "Present" on the VGN line for Dissociative Anesthetics.

Ask: "Do Dissociative Anesthetics cause the eyes to be unable to converge?"

- Lack of Convergence usually will be present.

Write "Present" on the LACK CONV line for Dissociative Anesthetics.

Ask: "How does Dissociative Anesthetics affect pupil size?"

- Dissociative Anesthetics do not normally affect pupil size; therefore, a person under the influence of a Dissociative Anesthetic, such as PCP usually will have pupils that are near normal in size.

Write "Normal" on the PUPIL SIZE line for Dissociative Anesthetics.

INSTRUCTOR NOTE: Actual DRE evaluations conducted on persons impaired by DXM resulted in pupils in the normal ranges.

- Dissociative Anesthetics normally will not effect pupillary reaction to light.

Write "Normal" on the RCTN LIGHT line for this category.

Indicators of Dissociative Anesthetic Influence Found in Checks of Vital Signs

Ask: "How do Dissociative Anesthetics affect pulse rate?"

- Dissociative Anesthetics usually increase pulse rate.

Write "Up" on the PULSE line for this category.

Ask: "How do Dissociative Anesthetics affect blood pressure?"

- Dissociative Anesthetics usually elevate blood pressure.

Write "Up" on the BLOOD PRESS line for this category.

Ask: "How do Dissociative Anesthetics affect body temperature?"

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

Write "Up" on the TEMP line for this category.

Ask: "How do Dissociative Anesthetics affect muscle tone?

- Dissociative Anesthetics usually cause rigid muscle tone.

Write "Rigid" on the MUSCLE TONE line for Dissociative Anesthetics.

Point out that PCP tends to produce the eye indicators associated with Depressants, and the vital sign indicators associated with CNS Stimulants or Hallucinogens.

Solicit students' questions about Dissociative Anesthetics.

E. Narcotic Analgesics

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

Ask students to name some examples of Narcotic Analgesics. Make sure the examples include some natural opiates as well as some synthetics.

Indicators of Narcotic Analgesic Influence Found in Eye Exams

Ask students: "Do Narcotics cause Horizontal Gaze Nystagmus?"

- HGN will not be present.

Write "None" on the HGN line for Narcotics.

Ask: "Do Narcotics cause Vertical Gaze Nystagmus?"

- Vertical Gaze Nystagmus will not be present.

Write "None" on the VGN line for Narcotics.

Ask: "Do Narcotics cause the eyes to be unable to converge?"

- Under the influence of Narcotics, the eyes should still be able to converge; therefore, Lack of Convergence usually is not present.

Write "None" on the LACK CONV line for Narcotics.

Ask: "How do Narcotics affect pupil size?"

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

Write "Constricted" on the PUPIL SIZE line for Narcotics

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

Write "Little or None Visible" on the RCTN LIGHT line for Narcotics.

Indicators of Narcotic Analgesic Influence Found in Checks of Vital Signs

Ask: "How do Narcotics affect pulse rate?"

- Narcotics usually lower pulse rate.

Write "Down" on the PULSE line for Narcotics.

Ask: "How do Narcotics affect blood pressure?"

- Narcotics usually lower blood pressure.

Write "Down" on the BLOOD PRESS line for Narcotics.

Ask: "How do Narcotics affect body temperature?"

- Narcotics usually lower body temperature.

Write "Down" on the TEMP line for Narcotics.

Ask: "How do Narcotics affect muscle tone?"

- Narcotic Analgesics usually cause flaccid muscle tone.

Write "Flaccid" on the MUSCLE TONE line for Narcotics.

Point out that Narcotics and Depressants tend to produce similar indicators in the vital signs, but very different indicators in the eyes.

Solicit students' questions about Narcotic Analgesics.

F. Inhalants

The category of Inhalants includes a wide variety of gases and fumes that have the power to intoxicate.

Ask students to name some commonly abused Inhalants.

Not all Inhalants affect their users in exactly the same way.

- There is probably less consistency in the signs and symptoms of Inhalants than there is with any other category.
- When we talk of the signs and symptoms of Inhalants, we often must qualify our statements.
- For example, we may say that a particular effect will be observed "for most Inhalants."

Indicators of Inhalant Influence Found in Eye Exams

Ask students: "Do Inhalants cause HGN?"

- With most Inhalants, HGN usually will be present.

Write "Present" on the HGN line for Inhalants.

Ask: "Do Inhalants cause Vertical Gaze Nystagmus?"

- With most Inhalants, Vertical Gaze Nystagmus may be present, especially with large doses.

Write "Present" on the VGN line for inhalants. Denote in parentheses "(High Doses)."

Ask: "Do Inhalants cause the eyes to be unable to converge?"

- Under the influence of Inhalants, Lack of Convergence usually will be present.

Write "Present" on the LACK CONV line for Inhalants.

Ask: "How do Inhalants affect pupil size?"

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

- Most Inhalants usually leave the pupils near normal in size.

Write "Normal" on the PUPIL SIZE line for Inhalants.

- Some inhalants may cause pupil dilation.

Put a (4) next to "Normal" and write "Normal, but may be dilated" below the matrix.

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

Write "Slow" on the RCTN LIGHT line for Inhalants.

Indicators of Inhalant Influence Found in Checks of Vital Signs

Ask: "How do Inhalants affect pulse rate?"

- Inhalants usually elevate pulse rate.

Ask: "How do Inhalants affect blood pressure?"

Write "Up" on the PULSE line for Inhalants.

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

Write "Up/Down" on the BLOOD PRESS line for Inhalants.

Put a (5) next to "Up/Down" and write down below the matrix "Down with Anesthetic Gases and Up with Volatile Solvents and Aerosols."

Ask: How do Inhalants affect body temperature?"

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

Write "Up/Down/or Normal" on the TEMP line for Inhalants.

Ask: "How do Inhalants affect muscle tone?"

- Depending on the Inhalant, muscle tone will either be normal or flaccid.

Write "Normal or Flaccid" on the MUSCLE TONE line for Inhalants.

Solicit students' questions about Inhalants.

G. Cannabis

Indicators of Cannabis Influence Found in Eye Exams

Ask students: "Does Cannabis cause Horizontal Gaze Nystagmus?"

- HGN will not be present.

Write "None" on the HGN line for Cannabis.

Ask: "Does Cannabis cause Vertical Gaze Nystagmus?"

- Vertical Gaze Nystagmus will not be present.

Ask: "Does Cannabis cause the eyes to be unable to converge?"

Write "None" on the VERT NYST line for Cannabis.

- Under the influence of Cannabis, Lack of Convergence will be present.

Write "Present" on the LACK CONV line for Cannabis.

Point out that Cannabis is the only category that causes Lack of Convergence but does not cause nystagmus.

Ask: "How does Cannabis affect pupil size?"

- Under the influence of Cannabis, the pupils may be dilated or possibly normal in size.

Write "Dilated" on the PUPIL SIZE line for Cannabis. Put a (6) next to "Dilated" and write "Possibly normal."

- The pupillary reaction to light will appear normal when under the influence of Cannabis.

Write "Normal" on the RCTN LIGHT line for Cannabis.

Indicators of Cannabis Influence Found in Checks of Vital Signs

Ask: "How does Cannabis affect pulse rate?"

- Cannabis usually elevates pulse rate.

Write "Up" on the PULSE line for Cannabis.

Ask: "How does Cannabis affect blood pressure?"

- Cannabis usually elevates blood pressure.

Write "Up" on the BLOOD PRESS line for Cannabis.

Ask: "How does Cannabis affect body temperature?"

- Cannabis usually leaves temperature near normal.

Write “Normal” on the TEMP line for Cannabis.

Ask: “How does Cannabis affect muscle tone?”

- Cannabis usually causes normal muscle tone.

Write “Normal” on the MUSCLE TONE line for Cannabis.

Solicit students' questions about Cannabis.

H. Wrap-Up

Point out that the matrix summarizes the major signs of drug influence that are observed by DREs. But emphasize there are other signs that a DRE considers in reaching a determination as to the category or combination of categories affecting a particular subject. These additional signs will be covered in depth during the seven-day DRE School.

Solicit students’ questions.