

Central Nervous System (CNS) Stimulants

Officer Jaren Zech



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Learning Objectives

- Overview
- Identify types of CNS Stimulants
- History and Origin
- Identify methods of administration
- Explain typical onset and duration of those effects
- Describe signs and symptoms
- Discuss potential indicators of impairment
- Poly-category considerations
- DRE face sheet breakdown

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Stimulant Overview

- Stimulants are among the most widely used and abused illegal substances in the United States
- Stimulants are known for “speeding up” the body.
- Commonly referred to as “uppers”
- Known to boost energy and suppress appetite

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Subcategories of CNS Stimulants

Cocaine

- Derived from the coca plant (*Erythroxylon Coca*)
- Naturally derived CNS stimulant extracted from the leaves
- Grown primarily in the Andean Region of South America. Also- India, Africa, and Indonesia.
- Created by drying out the leaves, stomped on to extract the alkaloid.
- Results in coca paste which turns into cocaine hydrochloride
- Cocaine can be turned into Crack when its heated and combined with a cutting agent such as baking soda

Amphetamines

- Amphetamines are synthetic drugs
- Consist of both pharmaceutical drugs and illicit drugs
- Common Pharmaceutical drugs include:
 - Desoxyn (methamphetamine hcl)
 - Adderall
 - Dexedrine
- Illicit Drugs
 - Methamphetamine (speed, crank, ice, meth)

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Subcategories Cont.

- Ritalin
- Ephedrine
- Cathinone (Khat)
- Caffeine
- Nicotine

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History and Origin

- Amphetamines were first synthesized in 1887 and became popular in the 1920s to treat colds
- First sold as an OTC inhaler in the 1930s which was the first instance of abuse.
- Given to soldiers during WWII to combat fatigue and improve mood.
- Injecting amphetamines became popular in the 1960s which led to crackdown on the drug production. This led to underground labs (meth labs) which were primarily run by outlaw motorcycle clubs.
- During the 1990s crystal methamphetamine began to grow in popularity. In 1995 Mexican based trafficking groups entered the market and have dominated it since.
- Earliest archaeological evidence of use of the coca plant (*Erythroxylon coca*) is around 5,000 years ago in South America
- Cocaine was first derived from the coca plant in the mid-nineteenth century. First prescribed for medicinal purposes in 1883
- "Coca-Cola" first entered the market in 1886 as a medicinal syrup and contained a small amount of cocaine as an ingredient until 1906 when it was outlawed by the Pure Food and Drug Law.
- Harrison Narcotic Act of 1914 outlawed Cocaine in the U.S.
- Cocaine reemerged as a popular drug in the 1970s through glamorization by the US media.
- Claims of being non-addictive made until the emergence of crack cocaine in 1985

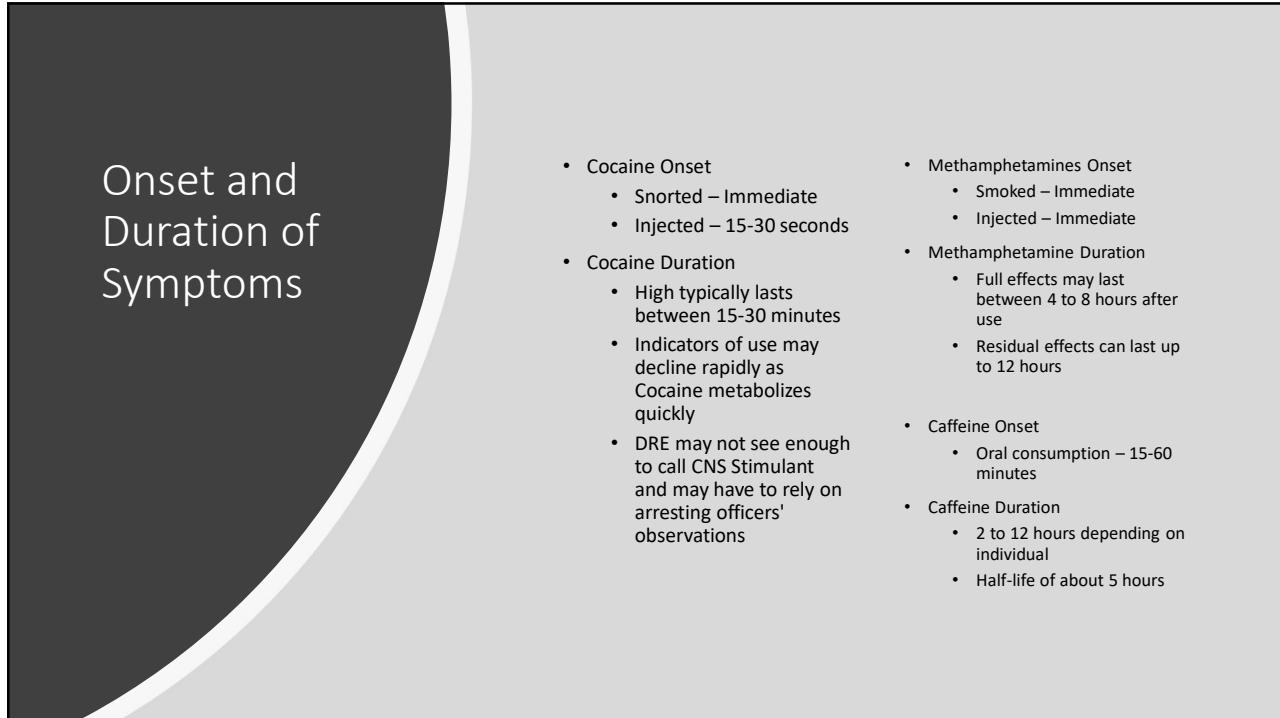
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Methods of Administration

- Insufflated
- Smoked
- Injected
- Orally

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<h2>Signs and Symptoms</h2>	<p><u>Signs</u></p> <ul style="list-style-type: none"> • Inability to sit still • Body tremors • Exaggerated reflexes • Bruxism • Insomnia • Dry mouth • Redness around nasal area if insufflated 	<p><u>Symptoms</u></p> <ul style="list-style-type: none"> • Euphoria • Intense happiness or excitement • Feelings of super strength and absolute self-confidence • Relaxed inhibitions • Lack of fatigue or tiredness • Anxiety or paranoia
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<h2>Indicators of Impairment</h2> <table border="1"> <tr> <td> <p><u>Vehicle in Motion</u></p> <ul style="list-style-type: none"> • Speeding • Aggressive driving • Following to close • Failure to maintain lane </td><td> <p><u>Interview of Driver</u></p> <ul style="list-style-type: none"> • Fidgety or unable to sit still • Eyes wide, rapid movements • Body tremors • Difficulty manipulating DL • Rapid speech • Paranoia </td></tr> </table>	<p><u>Vehicle in Motion</u></p> <ul style="list-style-type: none"> • Speeding • Aggressive driving • Following to close • Failure to maintain lane 	<p><u>Interview of Driver</u></p> <ul style="list-style-type: none"> • Fidgety or unable to sit still • Eyes wide, rapid movements • Body tremors • Difficulty manipulating DL • Rapid speech • Paranoia
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Pre-Arrest Screening (SFSTs)	
<ul style="list-style-type: none"> • HGN- None* • Walk and Turn <ul style="list-style-type: none"> • Rigidity in posture and walking • Balance issues • Restlessness • Inability to follow instructions 	<ul style="list-style-type: none"> • One Leg Stand <ul style="list-style-type: none"> • Balance issues • Rapid counting • Rigidity • Modified Romberg Balance <ul style="list-style-type: none"> • Body tremors • Eyelid twitching • Clenching • Rapid pulse • Rapid estimation of 30 seconds

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DRE Clinical Indicators of Impairment
<ul style="list-style-type: none"> • HGN: None • VGN: None • LOC: None • Pupil Size: Dilated • Reaction to Light: Slowed • Pulse Rate: Up (greater than 90BPM) • Blood Pressure: Up (greater than 140 / 90) • Temperature: Up (greater than 99.6) • Muscle Tone: Rigid

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Poly-Category Considerations

- Speedball – most common drug combination involving a CNS Stimulant
- Cannabis – goes with everything
- Fentanyl
- Xylazine

- Poly-Category Effects
- Additive – DA / Cannabis / Hallucinogens / Inhalants*
- Antagonistic – Narcotic Analgesics



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DRUG INFLUENCE EVALUATION					
Evaluator Trooper Scott Kedenburg	DRE # 16507	Rolling Log # 22-005-0039	Evaluator's Agency New York State Police	Case# (Session X - #1)	
Recorder/Witness Deputy Brandon Flicker, Livingston Co. S.O.	Crash: <input checked="" type="checkbox"/> None <input type="checkbox"/> Fatal <input type="checkbox"/> Injury <input type="checkbox"/> Property		Arresting Officer's Agency Wyoming County S.O.		
Arrestee's Name (Last, First, Middle) Rocke, Crystal	Date of Birth 07/10/1987	Sex <input type="checkbox"/> F <input checked="" type="checkbox"/> W	Race <input type="checkbox"/> White <input checked="" type="checkbox"/> Black <input type="checkbox"/> Asian <input type="checkbox"/> Hispanic	Arresting Officer (Name, ID#) Sgt. Aaron Chase #25141	
Date Examined / Time / Location 02/08/22 / 2215 / Wyoming Co. S.O.	Breath Test: Result: 0.00	Test Refused <input type="checkbox"/> Instrument # 41460	Chemical Test: Test or tests refused <input type="checkbox"/>	Blood <input checked="" type="checkbox"/>	Time of last drink? N/A
Alcohol or Drugs Given Given by: Sgt. Chase	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No "Couple of candy bars"	When: About 8 pm	What have you been drinking? How much? Water		Are you diabetic or epileptic? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Time now: Actual 11 pm? / 2218	When did you last sleep? Yesterday	How long? 2 or 3 hours	Are you tired or injured? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Are you under the care of a doctor or dentist? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Do you take insulin? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Do you have any physical defects? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Are you taking any medication or drugs? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Attitude: Cooperative, Animated Coordination: Jerky movements, Exaggerated			
Answered "Nothing" then laughed					
Speech: Talkative, Dry mouth					
Breath odor: Rancid					
Face: Acne, Open sores, Sweaty					
Corrective Lenses: <input checked="" type="checkbox"/> None <input type="checkbox"/> Glasses, if so <input type="checkbox"/> Hard <input type="checkbox"/> Soft	Eyes: <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Bloodshot <input type="checkbox"/> Watery	Blindness: <input checked="" type="checkbox"/> None <input type="checkbox"/> Left <input type="checkbox"/> Right	Tracking: <input checked="" type="checkbox"/> Equal <input type="checkbox"/> Unequal		
Pupil Size: <input checked="" type="checkbox"/> Equal <input type="checkbox"/> Unequal (explain)	Resting Nystagmus: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Vertical Nystagmus: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Able to follow stimulus: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Pulse/Tone: 1. <u>102</u> / <u>2220</u> 2. <u>106</u> / <u>2232</u> 3. <u>104</u> / <u>2252</u>		HGN Left Eye Right Eye Convergence 40/30		One Leg Stand 42/30	
Lack of Smooth Pursuit Maximum Deviation Angle of Onset		None	None	Right eye Left eye	
Modified Romberg Balance Test 2" 2" 2" 2" 2" 2"		M M S	Cannot keep balance 2		
Walk and Turn Test Rigid & Eyelid tremors			Starts too soon 2		
Quick steps: Rigid movements			1 st Nine 1 2		
Time Estimation 22 estimated as 30 seconds		Describe turn Quick, spun around	Cannot do test (explain) N/A	Type of footwear: Boots	
Finger to Nose (Draw lines to spots touched)		PUPIL SIZE: Room light (2.5 - 8.0) Darkness (5.0 - 8.5) Direct (2.0 - 8.5)		Nasal area: Clear	
		Left Eye 7.5 9.0 6.0		Oral cavity: Red	
		Right Eye 7.5 9.0 6.0	Rebound Dilatation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Reaction to Light: Slow	

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Questions?

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