

# Substance-Related Disorders

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## OBJECTIVES/RATIONALE

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Throughout history, cultures have used psychoactive drugs for various purposes such as: recreation, rituals, ceremonies, and medicinal. A major concern for today's medical professionals is substance abuse and its effect on society. The student will identify the most commonly abused drugs and list their effects.

TEKS: 121.26 (c) 1F, 1G

TAKS ELA 1, 2, 3, 4, 5, 6  
Science 2

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## KEY POINTS

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### POWER POINT

- I. Substance- related disorder
  - A. major categories of substances that are abused:
    1. alcohol
    2. amphetamine
    3. caffeine
    4. cannabis
    5. cocaine
    6. hallucinogen
    7. inhalant
    8. nicotine
    9. opioid
    10. sedative, hypnotic, or anxiolytic
- II. Substance Dependence and Substance Abuse
  - A. **dependence:**
    1. individual's symptoms have persisted for at least 1 month
    2. individual must manifest three of the following symptoms:
      - a. tolerance
        - i. need for markedly increased amounts of substance to achieve desired effect
        - ii. markedly diminished effect with continued use of same amount of substance
      - b. withdrawal
      - c. substance is taken in larger amounts or over a longer period than was intended
      - d. a pattern of persistent desire
      - e. great deal of time is spent in activities necessary to obtain the substance, use the substance, or recover from its effects
      - f. important social, occupational, or recreational activities are given up or reduced because of substance use
      - g. substance use is continued despite knowledge that it is a problem
  - B. **abuse:**
    1. pattern of substance use by one (or more) of the following:
      - a. recurrent substance use resulting in failure to fulfill obligations at school, home, or work

- b. recurrent substance use in situations in which it is physically hazardous
- c. recurrent substance-related legal problems
- d. continued substance use despite having persistent relationship problems caused by effects of substance

### III. Alcohol-Related Disorder

- A. criteria for alcohol abuse:
  - 1. daily use of alcohol necessary to function
  - 2. person unable to cut down or stop drinking
  - 3. binges last longer than 2 days
  - 4. person occasionally consumes as much as a fifth of liquor per day
  - 5. amnesia occurs during periods of intoxication (blackouts)
  - 6. inability to function at work or with friends and/or family
- B. intoxication symptoms: slurred speech, lack of coordination, unsteady walking, and nystagmus (involuntary, rhythmic eyeball movement)
- C. treatment for alcoholism
  - 1. detoxification process
    - a. takes place in hospital or rehabilitation center
  - 2. major treatment options frequently presented to recovering alcoholics
    - a. aversive therapy (Disulfiram/Antabuse therapy)
      - i. form of behavior therapy that uses learning principles to cause patient to associate thought of drinking with unpleasant stimulus
      - ii. motivates the patient to avoid drinking
      - iii. Disulfiram (Antabuse) is drug that causes metabolism of alcohol to be blocked
      - iv. result is buildup of toxic alcoholic by-product called acetaldehyde
      - v. produces unpleasant symptoms: flushing, sweating, palpitations, dyspnea, hyperventilation, tachycardia, hypotension, nausea, and vomiting
      - vi. useful adjunct treatment
    - b. inpatient rehabilitation treatment program
      - i. individual and group therapy
      - ii. intensive education and behavior modification to teach new coping skills to individuals who previously turned to alcohol
      - iii. teach patient communication skills and stress management
    - c. Alcoholics Anonymous
      - i. worldwide / available in most communities
      - ii. goal: to achieve a life of sobriety
      - iii. peer-support, self-help program
      - iv. related organizations for families of alcoholics (AL-Anon)

### IV. Amphetamine-Related Disorder

- A. drugs included in this category:
  - 1. amphetamines
  - 2. dexedrine
  - 3. methamphetamine (speed)
  - 4. appetite suppressants
- B. typical use:
  - 1. used to treat obesity

2. used by students to stay alert & study
  3. used by truck drivers to stay awake
  4. used by soldiers to decrease fatigue & increase aggression
- C. intoxication symptoms: euphoria, grandiosity, excessive wordiness, excessive vigilance, agitation, dilated pupils, elevated blood pressure, tachycardia, nausea, and vomiting, chills or perspiration
- D. evidence today suggests that amphetamine and related drugs produce both dependency and withdrawal states.
- E. most dangerous drugs presently available
1. can produce toxic psychosis in the most mentally stable people
  2. death from over dosage (usually associated with hyperpyrexia, convulsions, and cardiovascular shock)
- F. amphetamine-induced psychotic disorder clears in a matter of days or weeks following withdrawal of drug
- G. withdrawal depression may reach suicidal proportions
1. may be treated with tricyclic antidepressants

V. Cannabis-Related Disorder

- A. substances included in this category:
1. marijuana
  2. hashish
  3. purified delta-9-tetrahydrocannabinol (THC)
- B. marijuana the most commonly used substance in this category
1. widely prescribe for variety of ailments during the 19<sup>th</sup>-century
    - a. coughing, fatigue, migraine, asthma, delirium tremens, etc.
  2. effects
    - a. ability to cause euphoria
    - b. tendency to produce sedation
      - i. effects last 2 to 4 hours from smoking and 5 to 12 hours from ingestion
  3. intoxication symptoms: tachycardia, perception of slowed time, intensified subjective perceptions, apathy, elation, dry mouth, increased appetite, redness of eyes
  4. adverse reactions
    - a. appear to be dose related and environment in which it is used
    - b. rare reactions:
      - i. anxiety states (with or without paranoid thinking)
      - ii. panic states
      - iii. toxic psychosis

VI. Cocaine-Related Disorder

- A. cocaine abuse is a problem of almost epidemic proportions in our society today
- B. derived from leaves of coca plant which is indigenous to Bolivia and Peru
1. leaves chewed by natives for many years for ceremonial highs and religious “insight”
- C. intoxication symptoms: cocaine “high” is similar to that of amphetamines (euphoria, exhilaration, powerful sense of well-being and confidence, agitation, dilated pupils, elevated blood pressure, tachycardia, nausea, and vomiting, chills or perspiration )
- D. commonly abused form of cocaine is *crack*
1. inexpensive, very potent, readily available
- E. crack/cocaine intoxication marked by:

- 1. excitement, euphoria, restlessness, stereotyped movement, gnashing, grinding, or clenching teeth
  - F. tolerance and physical dependency develops
  - G. toxic psychosis with visual, auditory, and tactile hallucinations and paranoia
- VII. Hallucinogen-Related Disorder
  - A. not categorized by intoxication or withdrawal—instead by their ability to alter mental status
  - B. includes LSD, DMT, mescaline
  - C. episodes of hallucinogenic flashbacks can occur at unpredictable times for years following termination of drug
- VIII. Inhalant-Induced Disorder
  - A. intoxication symptoms: belligerence, impaired social functioning, dizziness, nystagmus, lack of coordination, slurred speech, unsteady gait, lethargy, depressed reflexes, tremor, muscle weakness, stupor or coma, euphoria
- IX. Nicotine-Related Disorder
  - A. tobacco dependence withdrawal symptoms:
    - 1. depressed mood
    - 2. insomnia
    - 3. irritability, frustration, anger
    - 4. anxiety
    - 5. difficulty concentrating
    - 6. restlessness
    - 7. decreased heart rate
    - 8. increased appetite or weight gain
- X. Opioid-Related Disorder
  - A. include opium, heroin, morphine, meperidine (Demerol), codeine, and methadone
  - B. the most addictive drugs abused
  - C. depresses areas of the brain that reduce hunger, thirst, and sex drive
  - D. Demerol, morphine, and codeine used in healthcare facilities as painkillers
  - E. methadone used to treat heroin addiction
  - F. intoxication symptoms: euphoria, drowsiness (“nodding out”), constriction of pupils (dilation if major overdose), dysphoria, apathy, psychomotor retardation, tachycardia, fever, lacrimation, rhinorrhea, piloerection, sweating, diarrhea, and yawning
  - G. withdrawal symptoms:
    - 1. sweats, shakes, chills, diarrhea, vomiting sharp stomach pain
- XI. Sedative-Hypnotic-Related Disorder
  - A. CNS depressants such as Librium, Valium, Seconal, and Serax
  - B. used to relieve anxiety; “chill-pills”—feelings of relaxation and inhibition
  - C. this class of drugs most often abused because they create longer acting effect than alcohol
  - D. extremely addictive
  - E. intoxication symptoms: cognitive confusion (memory impaired)
  - F. withdrawal symptoms: coarse tremors of hands, eyelids, and tongue; nausea and vomiting; malaise or weakness; autonomic hyperactivity; anxiety; depressed or irritable mood
  - G. sudden withdrawal can cause seizures
- XII. Barbiturates
  - A. this is a sedative category which relaxes the central nervous system
  - B. synthetic drugs made from barbituric acid
  - C. prescribed to treat insomnia, high blood pressure, and epilepsy

- D. when taken with alcohol, they tend to enhance effect
- E. cause mood shifts, restlessness, euphoria, excitement, confusion, and in some, hallucinations
- F. dependent individuals need to be withdrawn very slowly since sudden withdrawal can result in death
- G. withdrawal symptoms: cramps, nausea, delirium, convulsions

XIII. Predisposing Factors

- A. healthcare workers (high risk due to availability of drugs)
  - 1. highest addiction rate—anesthesiologists
- B. family history of substance abuse
- C. emotional problems
- D. ineffective coping mechanisms
- E. history of childhood physical or sexual abuse
- F. “addictive” personality?

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### ACTIVITIES

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- I. Write a critical analysis on an article related to substance abuse (e.g. *Addiction As A Disease*, *Can the Addicted Brain Change Back?*, *The Role of Biology and Addiction*, *Gateway Drugs*. (See MATERIALS NEEDED for subject information on-line site.)

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### MATERIALS NEEDED

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True/False Quiz for Substance-Related Disorders

Key for quiz

<http://www.pbs.org/wnet/closetohome/science/index.html> - Informational site for summary ACTIVITY. Topics include: Addiction as a Disease, Can the Addicted Brain Change Back? The Role of Biology and Addiction, and Gateway Drugs

[www.films.com](http://www.films.com) - *The Addicted Brain*, Films For The Humanities & Sciences (Psychology & Mental Health), 800, 257-5126, # DPM1363. (Excellent documentary video that examines the biochemistry of addiction and addictive behavior.)

*Mental Health & Mental Illness*, Sixth Edition, Patricia Barry, ISBN 0-397-55473-7, (Chapters 21 & 22)

*Diagnostic and Statistical Manual of Mental Disorders*—Fourth Edition (DSM-IV), ISBN 0-89042-062-9

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### ASSESSMENT

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Critical Analysis Rubric

True/False Quiz for Substance-Related Disorders

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## **ACCOMMODATIONS**

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For reinforcement, the student will create a chart identifying substance related disorders and symptoms.

For enrichment, the student will research and develop charts and graphs depicting the cost of substance abuse to our society (e.g. treatment costs, law enforcement costs, etc.).

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## **REFLECTIONS**

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# Critical Analysis Rubric

## Addiction as a Disease

**Student:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Period:** \_\_\_\_\_

<b>Scoring criteria</b>	<b>4</b> Excellent	<b>3</b> Good	<b>2</b> Needs Some Improvement	<b>1</b> Needs Much Improvement	<b>N/A</b>
The critical analysis has all required parts from introduction to body to conclusion.					
The critical analysis is concise but complete.					
The critical analysis demonstrates that the writer comprehends addiction and related disorders.					
The critical analysis demonstrates accurate spelling, grammar, and punctuation.					
The overall content of critical analysis emphasizes appropriate points.					
The writer shows an understanding of sentence structure, paragraphing, and punctuation.					
The source of the critical analysis is clearly and accurately documented.					
The critical analysis demonstrates correct use of medical language.					

NOTE: N/A represents a response to the performance, which is "not appropriate."

## Quiz—Substance-Related Disorders

NAME \_\_\_\_\_

DATE \_\_\_\_\_

PERIOD \_\_\_\_\_

**TRUE / FALSE** (Circle correct answer.)

1. Individuals who abuse alcohol might use it daily in order to function. T or F
2. Valium is a good aversive therapy for alcoholics. T or F
3. Medical supervision is necessary for alcohol detoxification. T or F
4. Amphetamines depress the central nervous system. T or F
5. Cannabis can increase appetite. T or F
6. The byproduct of cocaine that is inexpensive, very potent is derived from the hashish plant. T or F
7. There are no adverse reactions to marijuana. T or F
8. Unpredictable hallucinogenic flashbacks can be caused by LSD. T or F
9. Withdrawal from nicotine might result in drowsiness and lethargy. T or F
10. Sedatives can depress the central nervous system, but are not addictive. T or F

**Key:** True/False Quiz  
Substance-Related Disorders

1. **T**
2. **F**
3. **T**
4. **F**
5. **T**
6. **F**
7. **F**
8. **T**
9. **F**
10. **F**