

# Mindful Continuing Education

## Addiction in America: Introduction, Overview, and Neurobiology

### Chapter 1 Preview

**1. The most devastating consequences of substance abuse are seen in the tens of thousands of lives that are lost each year as a result of substance misuse, as well as in the associated physical and mental health problems that occur for those who are living with these issues.**

- A. True
  - B. False
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**2. Each of the following is an accurate statement about public health and mortality issues in the U.S. related to substance misuse EXCEPT:**

- A. Despite decades of expense and effort focused on a criminal justice-based model for addressing substance use-related problems, substance misuse remains a national public health crisis that continues to rob the United States of its people
  - B. Recent research has shown an unprecedented increase in mortality among middle-aged White Americans, Blacks, and Hispanics between 1999 and 2014 that was largely driven by alcohol and drug misuse and suicides
  - C. High annual rates of past-month illicit drug use and binge drinking among people aged 12 years and older from 2002 through 2014 emphasize the importance of implementing evidence-based public-health-focused strategies to prevent and treat alcohol and drug problems in the U.S.
  - D. A public health approach seeks to improve the health and safety of the population by addressing underlying social, environmental, and economic determinants of substance misuse and its consequences
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**3. According to the Surgeon General, a comprehensive approach is needed to address substance use problems in the United States that includes:**

- A. Enhanced public education to improve awareness about substance use problems and demand for more effective policies and practices to address them
  - B. Widespread implementation of evidence-based prevention policies and programs and improved access to evidence-based treatment services, integrated with mainstream health care, for those at risk for or affected by substance use disorders
  - C. Recovery support services (RSS) to assist individuals in maintaining remission and preventing relapse as well as research-informed public policies and financing strategies
  - D. All of the above
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## Substances Discussed in this Report

**4. A substance misuse problem is one that is created after prolonged and repeated use, produces changes to the brain, and may significantly impact health and functioning.**

- A. True
  - B. False
- 

## Substance Use Disorder Treatment Programs

**5. Substance use disorder treatments vary substantially in level of specialization, content, duration, and setting, and those receiving services may differ substantially in the severity, duration, and complexity of their substance use disorder, with some needing ongoing treatment and others needing only a brief intervention.**

- A. True
  - B. False
- 

## Relevance of Substance Use and Misuse

**6. Although individuals with substance use disorders have elevated rates of substance misuse-related health and social problems, many people who misuse substances do not meet the diagnostic criteria for a substance use disorder.**

- A. True
  - B. False
- 

**7. Experts contend that greater overall impact is likely to be achieved by prioritizing addiction and severe substance use rather than targeting substance misuse in the general population.**

- A. True
  - B. False
- 

## Costs and Impact of Substance Use and Misuse

**8. While alcohol misuse is associated with liver and pancreatic diseases, drug use is associated with:**

- A. Chronic pain conditions and cardiovascular disease
- B. Reproductive system disorders

- C. Trauma and stroke
  - D. Cancers of the oral cavity, colon, and rectum
- 

## **Overdose Deaths-The Opioid Crisis**

**9. Over-prescription of powerful opioid pain relievers beginning in the 1990s led to a rapid escalation of use and misuse of these substances, which in turn led to a resurgence of heroin use, and a dramatic increase in the number of people dying from opioid overdoses.**

- A. True
  - B. False
- 

## **Vulnerability to Substance Misuse Problems and Disorders**

**10. Which of the following is NOT a correct statement about protective/risk factors and vulnerability to substance misuse problems and disorders?**

- A. No single individual or community-level factor determines whether an individual will develop a substance misuse problem or disorder
  - B. Most risk and protective factors can be modified through preventive programs and policies to reduce vulnerability
  - C. Although substance misuse problems and disorders may occur at any age, adolescence and young adulthood are particularly critical at-risk periods
  - D. Research now indicates that the majority of those who meet criteria for a substance use disorder in their lifetime started using substances during adolescence and met the criteria by age 25-30
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## **Diagnosing a Substance Use Disorder**

**11. The new diagnostic criteria for substance use disorder are likely to reduce the 'all or nothing' thinking that has characterized the substance use field, and although tolerance and withdrawal remain major clinical symptoms, they should no longer be the deciding factor in whether an individual 'has an addiction.'**

- A. True
  - B. False
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## **The Separation of Substance Use Treatment and General Health Care**

**12. Despite numerous research studies documenting high prevalence rates of substance use disorders among patients in health care settings, few general health care organizations offer services for the early identification and treatment of substance use disorders, and not many medical, nursing, dental, or pharmacy schools teach their students about substance use disorders.**

- A. True
  - B. False
- 

## **Marijuana: A Changing Legal and Research Environment**

**13. A growing body of evidence suggests the potential therapeutic value of marijuana's constituent cannabinoid chemicals in numerous health conditions, although evidence collected so far in clinical investigations of the marijuana plant is still insufficient to meet FDA standards for a finding of safety and efficacy for therapeutic indications.**

- A. True
  - B. False
- 

## **Addressing Substance Use in Specific Populations**

**14. Although many prevention, treatment, and recovery regimens in the substance use disorder field were created as standardized programs, personalized care is now more common.**

- A. True
  - B. False
- 

## **Chapter 2- An Evolving Understanding of Substance Use Disorders**

**15. Addiction has many features in common with disorders such as diabetes, asthma, and hypertension, as all of these disorders are chronic, influenced by genetic, developmental, behavioral, social, and environmental factors, and are:**

- A. Complex and problematic
  - B. Characterized by functional impairment
  - C. Subject to relapse
  - D. Degenerative
- 

**16. Progressive changes in the brain may endure long after individuals stop using substances and may lead to relapse, with such relapse occurring in approximately 40% of people treated for a substance use disorder within the first year after they are discharged from treatment.**

- A. True
  - B. False
- 

## **The Primary Brain Regions Involved in Substance Use Disorders**

**17. While the prefrontal cortex controls the pleasurable effects of substance use and is responsible for the formation of habitual substance taking, the basal ganglia is involved in stress and the feelings of unease, anxiety, and irritability that typically accompany substance withdrawal.**

- A. True
  - B. False
- 

## **The Addiction Cycle**

**18. The stage at which one seeks substances again after a period of abstinence is:**

- A. Expectation/premonition
  - B. Calculation/projection
  - C. Deliberation/presumption
  - D. Preoccupation/anticipation
- 

## **Addictive Substances "Hijack" Brain Reward Systems**

**19. Brain imaging studies in humans show that cannabinoids in marijuana activate serotonin and GABA receptors to promote pleasurable feelings.**

- A. True
  - B. False
- 

## **Stimuli Associated with Addictive Substances Can Trigger Substance Use**

**20. Over time, as a person learns to associate the stimuli present while using a substance with the substance's rewarding effects, these stimuli can activate the dopamine system on their own and trigger powerful urges to take the substance, which is known as incentive salience.**

- A. True
  - B. False
- 

## **Withdrawal/Negative Affect Stage: Extended Amygdala**

**21. People addicted to substances experience an overall reduction in the sensitivity of the brain's reward system, both to addictive substances and also to natural reinforcers, such as food and sex, because natural reinforcers also depend upon the same reward system and circuits.**

- A. True
  - B. False
- 

**22. During the negative effect stage of addiction, activation of stress neurotransmitters plays a key role in the negative feelings associated with withdrawal and in:**

- A. Habit formation
  - B. Stress-triggered substance use
  - C. Physical and emotional fatigue
  - D. None of the above
- 

## **Figure 2.11: Major Neurotransmitter Systems**

**23. People with alcohol, cocaine, or opioid use disorders show impairments in executive function, which suggests decreased activity in the Go system of the prefrontal cortex and greater reactivity of the Stop system in response to substance-related stimuli.**

- A. True
  - B. False
- 

## **Opioids**

**24. Opioid addiction typically involves a pattern of intense intoxication, the development of tolerance, escalation in use, and withdrawal signs that include profound negative emotions and physical symptoms.**

- A. True
  - B. False
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## **Alcohol**

**25. Extreme patterns of alcohol use may evolve into a similar pattern as opioid addiction, where the substance must be available at all times to avoid the negative consequences of withdrawal.**

- A. True
  - B. False
-

## Stimulants

**26. Stimulants such as cocaine and amphetamines cause the release of dopamine in the brain regions that impact autonomic functions and cause users to feel energized.**

- A. True
  - B. False
- 

**27. Cannabis addiction follows a pattern that involves a significant binge/intoxication stage characterized by episodes of using the substance to the point of intoxication, which is a similar pattern to:**

- A. Opioids
  - B. Alcohol
  - C. Stimulants
  - D. Benzodiazepines
- 

## Factors that Increase Risk for Substance Use, Misuse, and Addiction

**28. Research suggests that the stress caused by such factors as physical, emotional, and sexual abuse, neglect, mental illness, or poverty may act on the same stress circuits in the brain as addictive substances, which may explain why they increase addiction risk.**

- A. True
  - B. False
- 

## Genetic and Molecular Factors

**29. Each of the following is a correct statement about how genetic factors may impact addiction EXCEPT:**

- A. Substance use disorders are influenced by the complex interplay between a person's genes and environment
  - B. Gene variants have been identified that either predispose to or protect against addiction
  - C. Genes involved in strengthening the connections between neurons and in forming drug memories have been associated with addiction risk
  - D. Genetic factors are thought to account for about 25 to 50 percent of individual differences in risk for addiction
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## Biological Factors Contributing to Population-based Differences in Substance Use

**30. Clinical reports suggest that men tend to drink more than women, have greater risk for polysubstance abuse, and progress from initial substance use to a disorder at faster rates than women.**

- A. True
  - B. False
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