TEST YOUR KNOWLEDGE ON DRUGS AND DRUG USE BY TAKING THE: 2020 National Drug & Alcohol IQ Challenge

Go to **https://teens.drugabuse.gov/2020IQChallenge** for an online interactive version.

1 **The percentage of teens who drink alcohol has increased over the last 10 years.**

- **A.** True
- **B.** False

2 **According to research from 2019, in the past month, approximately how many high school seniors reported vaping THC, the chemical in marijuana that causes the high?**

- **A.** 40 percent
- **B.** 32 percent
- **C.** 26 percent
- **D.** 14 percent

3 **Scientists have discovered that vaping nicotine exposes people to which of the following chemical compounds?**

- **A.** Formaldehyde, a gas that has been linked to cancer
- **B.** Acrylamide, a chemical used to treat wastewater, including sewage
- **C.** Crotonaldehyde, a poisonous and highly flammable liquid with a suffocating odor
- **D.** All of the above

4 **Which drug do adolescents use the most?**

- **A.** Alcohol
- **B.** Marijuana
- **C.** Nicotine (vaping)
- **D.** None of the above

5 **If a person takes Ritalin® (a prescription medicine for attention-deficit/hyperactivity disorder) at the same time they take a decongestant, what could happen to them?**

- **A.** Blurred vision
- **B.** Increased heart rate and blood pressure
- **C.** Chills and sweating
- **D.** None of the above

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For more questions and to find out the correct answers, go to the next page.

2020 National Drug & Alcohol IQ Challenge

6 **Which statement below is *false*?**

- **A.** The liquid in e-cigarettes—whether or not it is flavored—can be toxic (poisonous).
- **B.** Unlike cigarettes, vaping nicotine does not affect the development of the brain's reward system.
- **C.** Some e-cigarettes contain high levels of metals like nickel and chromium.
- **D.** Early studies suggest that teens who vape are at a greater risk for smoking cigarettes in the future.

7 **Research shows that young people's brains keep developing well into their 20s. What effect could alcohol have on the development of the brain? Choose all that apply:**

- **A.** Cause cognitive or learning problems
- **B.** Affect brain structure and function
- **C.** Sharpen your cognitive function
- **D.** None of the above

8 **Which of the following could increase the risk that someone will have a problem with drugs?**

- **A.** Mental health issues
- **B.** Starting drug use at a young age
- **C.** Genetics
- **D.** All of the above

9 **Fill in the blank: Prescription opioid medicines, used to relieve pain, are similar to the illegal drug _____ .**

- **A.** Cocaine
- **B.** Methamphetamine
- **C.** Heroin
- **D.** Psilocybin

10 **Long-term effects of methamphetamine (meth) use include which of the following?**

- **A.** Mood swings
- **B.** Severe dental problems, known as "meth mouth"
- **C.** Psychosis
- **D.** All of the above

11 **Which medicine, if given right away, can reverse the effects of a heroin or opioid overdose and prevent death?**

- **A.** Methadone
- **B.** Oxycodone
- **C.** Naloxone
- **D.** Hydrocodone

For the correct answers, go to the last page.

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2020 National Drug & Alcohol IQ Challenge

BRAINIAC QUESTIONS

Test yourself with these difficult questions about the brain and drugs.

12 **Brain research has shown that addiction harms the brain in at least three ways. One of them is that it weakens regions of the brain that help a person make good decisions and control their impulses. What's the name for that part of the brain?**

- **A.** Nucleus accumbens
- **B.** Prefrontal cortex
- **C.** Amygdala
- **D.** Hippocampus

13 **In a study using brain scans, scientists found that teens with higher substance use between ages 16 and 18 had smaller gray matter volume at age 25 in which part of the brain?**

- **A.** Pars opercularis
- **B.** Amygdala
- **C.** Ventral striatum
- **D.** Cerebellum

HTTPS://TEENS.DRUGABUSE.GOV/2020IQCHALLENGE

For the correct answers, go to the last page.

ANSWERS TO THE: 2020 National Drug & Alcohol IQ Challenge

1 **B. False.** The percentage of teens who report having a drink in the past month has actually decreased over the last 10 years, by a third among 12th graders and by nearly 50 percent among 8th graders. However, given the many potential consequences of underage drinking, efforts are still needed to reduce the number of teens who drink or start drinking alcohol. **https://www.samhsa.gov/data/report/2018-nsduh-detailed-tables**.

2 **D. 14 percent.** The number of high school seniors who reported vaping marijuana during the past month increased from 7.5 percent in 2018 to 14 percent in 2019. This is the second largest 1-year jump for any substance in the 45-year history of NIDA's Monitoring the Future survey. Read more about marijuana here: **https://teens.drugabuse.gov/drug-facts/marijuana**.

3 **D. All of the above.** Formaldehyde, acrylamide, and crotonaldehyde are found in small amounts in some e-cigarettes, but we aren't sure yet how much of those compounds someone would need to inhale to be in danger. Scientists have also identified other compounds in e-cigarettes, such as propylene oxide (a liquid that can irritate the eyes, skin, and respiratory tract, and depress the central nervous system) and acrylonitrile (which is used to make plastics and adhesives). Read more about the compounds a person inhales when vaping: **https://teens.drugabuse.gov/blog/post/e-cigarettes-inhaling-more-than-you-bargained-for**.

4 **A. Alcohol.** Although alcohol use continues to decline for high school students, in 2019, more than 52 percent of high school seniors reported using alcohol in the past year. This is compared to 35.7 percent of high school seniors using marijuana and 35.3 percent vaping nicotine in the same timeframe. For more information, refer to the National Institute on Alcohol Abuse and Alcoholism's "Underage Drinking" fact sheet: **https://www.niaaa.nih.gov/publications/brochures-and-fact-sheets/underage-drinking**.

5 **B. Increased heart rate and blood pressure.** Ritalin and other stimulants can increase a person's alertness and attention, but they can also increase heart rate and blood pressure. The decongestants in many over-the-counter cold medicines are stimulants as well, and they have similar effects. So, taking Ritalin and a decongestant at the same time can cause an *extra* increase in heart rate and blood pressure. Over time, this can damage the heart. In fact, mixing any prescription and over-the-counter medicines with other medicines or substances can have potentially dangerous effects. Read more about the risks of mixing medicines: **https://teens.drugabuse.gov/blog/post/mixing-medicines-can-be-dangerous**.

6 **B. Regardless of how nicotine is delivered, nicotine activates the brain's reward circuits.** Pleasure caused by nicotine's interaction with the reward circuit motivates some people to use nicotine again and again, despite risks to their health and well-being. Because the brain undergoes critical development in the teen years, teens who use nicotine products are uniquely at risk for long-lasting effects. Read more about the real cost of vaping: **https://teens.drugabuse.gov/blog/post/real-cost-vaping**, and about how teen e-cigarette use has doubled between 2017 and 2019: **https://www.drugabuse.gov/news-events/news-releases/2019/09/teen-e-cigarette-use-doubles-2017**.

7 **A. and B. While young people's brains continue to develop into their 20s, alcohol can alter this development, potentially affecting both the brain's structure and its function, meaning how well it processes information.** This may cause cognitive or learning problems later in life. It's especially risky when people start drinking young and drink heavily. Read more about young people and drinking here: **https://pubs.niaaa.nih.gov/publications/MakeADiff_HTML/makediff.htm**.

8 **D. All of the above.** A combination of factors—genes, environment, and many more—helps determine whether using drugs will lead to addiction. For example, a person who has depression, anxiety, or other mental health issues might use drugs to try to feel better. Someone who uses drugs when they're young has a greater chance of becoming addicted when they're older than someone who *doesn't* use drugs when they're young. And research suggests that as much as half of a person's risk of becoming addicted to drugs may depend on their genetic makeup. Read more about the factors that increase the risk of having a problem with drugs: **https://teens.drugabuse.gov/blog/post/what-increases-risk-having-drug-problem-part-1** and **https://teens.drugabuse.gov/blog/post/what-increases-risk-having-drug-problem-part-2**.

9 **C. Heroin.** Heroin is a very addictive drug made from morphine, a psychoactive (mind-altering) substance taken from the resin of the seed pod of the opium poppy plant. Heroin use and overdose deaths have dramatically increased over the last decade. Read more about heroin: **https://teens.drugabuse.gov/drug-facts/heroin**.

10 **D. All of the above.** Continued use of methamphetamine can cause long-lasting effects, even after a person quits using the drug. These effects include mood swings, severe dental problems, known as "meth mouth," and psychosis (hearing, seeing, or feeling things that aren't there). Other long-term effects of meth use include addiction; extreme weight loss; anxiety and confusion; problems sleeping; violent behavior; skin sores from scratching; problems with thinking, emotion, and memory; and paranoia (unreasonable distrust of others). Read more about the risks of using meth: **https://teens.drugabuse.gov/drug-facts/methamphetamine-meth**.

11 **C. Naloxone.** Naloxone is an opioid antagonist, meaning that it attaches to opioid receptors and reverses and blocks the effects of other opioids. If a person's breathing has slowed or stopped because of an opioid overdose, naloxone can quickly restore normal breathing. Read more about naloxone: **https://teens.drugabuse.gov/blog/post/say-what-naloxone**.

BRAINIAC QUESTIONS

12 **B. Prefrontal cortex.** Often referred to as the "CEO of the brain," the prefrontal cortex is responsible for critical thinking and abstract thought, as well as many other functions such as focusing attention, organizing thoughts, controlling impulses, and forming strategies for future action. The prefrontal cortex is one of the last regions of the brain to mature, so changes caused by drug use or misuse could have long-lasting effects. Read more about the parts of the brain and what they control: **https://teens.drugabuse.gov/blog/post/meet-your-brain**.

13 **A. Pars opercularis.** Substance use by teens ages 16 to 18 was linked with significantly less gray matter at age 25 in the left pars opercularis, a part of the brain that is involved in cognitive control. The neurons that make up gray matter are involved in much of what the brain does: muscle control, sensory control (hearing, seeing), speech, memory, and emotions. The pars opercularis is part of the prefrontal cortex, the part of the brain responsible for helping you make decisions. The prefrontal cortex isn't fully mature until well after you graduate from high school! Scientists think this might help explain why teens tend to take more risks than adults, including experimenting with drugs. Read more about how drug use can "shape" your brain: **https://teens.drugabuse.gov/blog/post/sculpting-your-brain-science-addiction**.

NIH National Institute on Drug Abuse

For more information about drugs and drug use, visit **https://www.drugabuse.gov** or call 1-877-643-2644.
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