

# TEST YOUR KNOWLEDGE ABOUT DRUGS AND DRUG USE BY TAKING THE:

## 2021 National Drug & Alcohol IQ Challenge

Go to [teens.drugabuse.gov/IQChallenge](https://teens.drugabuse.gov/IQChallenge)  
for an online interactive version.

**1** “Bath salts,” or synthetic cathinones, are sometimes sold in small foil or plastic packages labeled as \_\_\_\_\_.

- A. Plant food
- B. Glass cleaner
- C. Research chemicals
- D. All of the above

**2** Two well-known components of the cannabis (marijuana) plant are THC and CBD. Both affect the brain, but which compound is psychotropic, or produces a high by altering consciousness?

- A. CBD
- B. THC

**3** True or False: In the United States, nearly 30 people died every day from drunk driving crashes in 2019.

- A. True
- B. False

**4** Some teens are prescribed stimulant medications (amphetamines) to manage attention deficit hyperactivity disorder (ADHD). Which are examples of prescription stimulant misuse?

- A. Taking stimulant medication that was not prescribed to you
- B. Taking more than your prescribed dose
- C. Taking a prescription stimulant medication in a way other than prescribed, such as snorting or injecting
- D. All of the above

**5** True or False: Vaping nicotine can be addictive just like smoking cigarettes.

- A. True
- B. False

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For more  
questions, go  
to the next page.

# 2021 National Drug & Alcohol IQ Challenge

**6** What is a common reason people may use drugs, even if they know using drugs may be unhealthy for them?

- A. To cope with trauma
- B. To feel pleasure/experience a “high”
- C. To enhance performance in sports or school
- D. All of the above

**7** \_\_\_\_\_ pathways in the brain are responsible for getting us to repeat pleasurable activities—a process known as reinforcement.

- A. Dopamine
- B. Steroid
- C. Hormone
- D. Sensory

**8** Which of the following is true regarding opioids?

- A. They tell your brain to block pain and they also make you feel very relaxed.
- B. Opioids can be dangerous if misused.
- C. They are used to treat severe pain.
- D. All of the above.

**9** Which of the following is a concern raised by health professionals about vaping devices?

- A. Some research suggests teens who vape regularly are more likely to try other tobacco products.
- B. Tests have found toxic chemicals that are known to cause cancer in the aerosol (vapor) of some devices.
- C. A filler used in some vaping products, especially those containing THC, is linked to a serious lung illness called EVALI.
- D. All of the above.

**10** True or False: Driving after using marijuana isn't dangerous like driving after drinking alcohol.

- A. True
- B. False

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# BRAINIAC QUESTIONS

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

**11**

For drugs to affect the brain, chemical messengers called neurotransmitters must bind to \_\_\_\_\_.

- A. Prefrontal cortex
- B. Receptors
- C. Neurons
- D. None of the above

**12**

While the cannabis (marijuana) plant has not been approved as a medicine by the federal government in the United States, some components of cannabis, such as CBD, have medical uses. For which purpose has CBD been approved by the U.S. Food and Drug Administration (FDA)?

- A. Osteoarthritis
- B. Generalized anxiety disorder
- C. Seizures in some forms of epilepsy
- D. All of the above

**13**

MDMA, short for 3, 4-methylenedioxymethamphetamine, is most commonly known as Ecstasy or Molly. MDMA produces its effects by increasing the activity of which neurotransmitters in the brain?

- A. Serotonin
- B. Dopamine
- C. Norepinephrine
- D. All of the above

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For  
the correct  
answers, go to  
the next page.



# ANSWERS TO THE: 2021

## National Drug & Alcohol IQ Challenge

**1 D. All of the above.** Synthetic cathinones may be sold legally in stores or online in small plastic or foil packages with the words, “Not for human consumption.” In addition to being labeled as “bath salts,” they are sometimes labeled “plant food,” “glass cleaner,” or “research chemicals.” Consuming these drugs can cause harmful effects, including life-threatening overdoses. Read more about [synthetic cathinones \(bath salts\)](#).

**2 B. THC.** Delta-9-tetrahydrocannabinol (THC) is the component of cannabis that alters consciousness and produces a high feeling in certain doses. CBD, or cannabidiol, alone does not cause users to feel high. Different strains of cannabis contain varying amounts of THC and CBD. However, unregulated cannabis products may not accurately report these concentrations. Read more about [cannabis \(marijuana\)](#).

**3 A. True.** Every day, 28 people died as a result of drunk driving crashes in the United States in 2019, according to the [National Highway Traffic Safety Administration](#). That's one person every 52 minutes. Alcohol can impair coordination and memory, leading to devastating accidents. Read more about [alcohol](#).

**4 D. All of the above.** These medications are safe and effective for the treatment of ADHD. However, misusing ADHD medications can cause headaches, nausea, anxiety, and sleeping problems. High doses of prescription stimulants can cause your body temperature to get dangerously high and make your heart beat too fast. While stimulants may improve some skills (like focus) in people who have been diagnosed with ADHD, they may diminish others (like creative thinking). Misusing prescription stimulants can lead to addiction. It's important to talk to your doctor about how to use these medications safely. Read more about [prescription stimulants \(amphetamines\)](#).

**5 A. True.** Nicotine in any form can be addictive. The vapor from vaping devices typically contains nicotine and a range of other chemicals. Additional research is needed to fully understand how these other chemicals affect health. Read more about [vaping nicotine](#).

**6 D. All of the above.** People can choose to use drugs for many reasons. They may want to feel good, stop feeling bad, or perform better in school or at work, or they are curious because others are doing it and they want to fit in. In some people, repeatedly using drugs can lead to a medical problem known as substance use disorder, or addiction, in which they may find it very difficult to stop using drugs on their own. Addiction can make it hard to stay in school, keep a job, and maintain healthy relationships with loved ones. Addiction also makes life even harder on teens who feel anxious or depressed. Fortunately, treatment can help people with [substance use disorder recover and manage their health and lives](#).

**7 A. Dopamine.** When our brain's reward circuits are activated by a pleasurable experience, a burst of the neurotransmitter (chemical messenger) dopamine signals that something important is happening that needs to be remembered. This process can reinforce healthy, positive behaviors but can also reinforce taking drugs.

**8 D. All of the above.** Opioids are prescribed to treat severe pain from serious injuries or after surgeries. Opioids can lead to severe adverse health effects, including overdose and death, if taken in large quantities or with certain other drugs or alcohol. If you are prescribed opioids for pain, carefully follow the instructions to use them safely. Prescription opioids can make you feel very relaxed or high, which is why they are sometimes misused. A powerful synthetic opioid called [fentanyl](#) is sometimes used to treat people with severe pain. When it's misused or mixed with other drugs, with or without a person knowing, the consequences can be fatal. In fact, fentanyl is now one of the most common drugs involved in drug overdose deaths in the United States.

**9 D. All of the above.** A study showed that students who have vaped nicotine by the time they start 9th grade are more likely than others to start smoking traditional cigarettes and other smokable tobacco products within the next year. Researchers have found toxic chemicals known to cause cancers in the aerosol (vapor) of some vaping products. And in 2020, thousands of people got sick and dozens died from an illness called [EVALI](#), which stands for “e-cigarette or vaping use-associated lung injury.” Laboratory data show that vitamin E acetate, an additive in some THC-containing vaping products, is strongly linked to the EVALI outbreak. Read more about [the health effects of vaping](#).

**10 B. False.** Driving under the influence of any psychoactive drug can be dangerous. The effects of specific drugs on driving skills differ depending on how they act in the brain. Cannabis (marijuana) can slow reaction time, impair judgment of time and distance, and decrease coordination. Research has shown drivers using marijuana display an increase in lane weaving, poor reaction time, and altered attention to the road. Read more about [drugged driving](#).

## BRAINIAC QUESTIONS

**11 B. Receptors.** Every neuron (nerve cell) in your brain has *receptors* on its surface that receive signals from other neurons nearby using messenger chemicals called neurotransmitters. When a neurotransmitter is sent from one neuron to another, it attaches to a receptor on the receiving cell—kind of like a key in a lock. Because using drugs can flood the brain with certain neurotransmitters, in some people, repeatedly using drugs can change the way the brain processes these chemicals. The developing brains of teens are particularly sensitive to these changes.

The good news is that the brain can recover, at least in part, after stopping drug use. The sooner a person stops, the better the chances are that they will recover. Treatment for substance use disorders enables people to counteract the disruptive effects of repeated drug use on their brain and behavior and to lead healthier lives. Read more about the [brain and addiction](#).

**12 C. Seizures in some forms of epilepsy.** CBD has been approved by the FDA as a treatment for seizures for patients 2 years of age and older with some severe forms of epilepsy. Read more about [cannabis \(marijuana\)](#).

**13 D. All of the above.** MDMA produces its effects by increasing the activity of three neurotransmitters (the chemical messengers of brain cells): *serotonin*, *dopamine*, and *norepinephrine*.

- **Serotonin** plays a role in controlling our mood, aggression, sexual activity, sleep, and feelings of pain. The extra serotonin that is released by MDMA likely causes mood-lifting effects in users.
- **Dopamine** helps to control movement, motivation, emotions, and sensations like pleasure. MDMA's effects on dopamine are linked to continued cravings in those who use it frequently.
- **Norepinephrine** increases heart rate and blood pressure.

Read more about [MDMA \(Ecstasy or Molly\)](#).



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

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