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MARIJUANA: WHAT DOES A POISON CENTER DOCTOR WANT YOU TO KNOW?

Marijuana is the most commonly used illegal drug in the United States (SAMHSA, 2017). The U.S. Centers for Disease Control and Prevention (CDC) estimates there were 37.6 million users in the past year. ‘Marijuana’ refers to the dried leaves, flowers, seeds, and stems from the hemp plant *Cannabis sativa*. Resins found in those parts of the plant contain the psychoactive (mind-altering) chemical tetrahydrocannabinol, or THC. Slang terms include: pot, weed, reefer, Mary Jane, ganja, grass, and others.

Public acceptance of recreational marijuana use is growing. An increasing number of young people think marijuana is harmless (Johnston, 2018). There have long been claims that it has medicinal value for patients with conditions such as HIV/AIDS, seizure disorders, glaucoma, cancer, severe pain, and severe nausea. Marijuana remains illegal in Virginia and is also illegal under federal law. However, more states are decriminalizing it in part or entirely.

The debate over whether marijuana should be legal is intense. There are many documented negative health effects associated with using marijuana (Volkow, 2014), but it has been argued that the same is true for alcohol and tobacco. There are compelling accounts from many patients about marijuana’s medicinal benefit, but research does not support all of those claims

(Bridgeman, 2017). More peer-reviewed studies are needed. Meanwhile, doctors at the Blue Ridge Poison Center want to share a few facts with you about marijuana.

THERE MAY BE “HIGHS,” BUT THERE MAY ALSO BE “LOWS.”

Marijuana users describe experiencing a pleasurable sense of relaxation, euphoria, and creativity. But users may also experience impaired coordination, impaired short-term or long-term memory, slowed reaction time, and impaired judgment. And sometimes users experience anxiety, paranoia, frightening hallucinations, panic, fast heart rate, increased blood pressure, nausea and vomiting.

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POISON TRIVIA

Chemicals derived from this colorful garden plant are used to make *Digoxin*, a drug prescribed for heart conditions. All parts of the plant can cause dangerous heart effects if eaten or used to make tea. What is the plant?

Answer page 4

Negative effects may also lead to an injury, such as a fall or a car accident. Heavy marijuana users are more likely to report thoughts of suicide than are non-users (National Academies of Sciences, Engineering, and Medicine, 2017). Hospitals across the U.S. are experiencing a rise in emergency department visits involving marijuana (Zhu, 2016). Negative effects are more common when a person takes too much, when the marijuana is unexpectedly potent (strong), or if the user is inexperienced with marijuana.



MARIJUANA TODAY IS MORE POTENT THAT IN DECADES PAST.

The potency, or strength, of marijuana plants has consistently risen over time. In the early 1990s, the average THC content of marijuana plant material was between 3-8%. In 2013, it was between 9-16% (EISOhly, 2016). With the increase in potency comes a greater chance of negative effects. Rising THC levels may be partly responsible for the rise in emergency department visits involving marijuana.

THERE ARE NEW CONCENTRATED PRODUCTS WHICH ARE EVEN STRONGER THAN THE CANNABIS PLANT

There are a variety of new products made by extracting the THC from the plant material. The result is a highly concentrated product which can take several forms:

- a waxy or creamy substance, called ‘wax’ or ‘budder’
- a brittle, amber-colored substance called ‘shatter’
- a dry, grainy substance called ‘dust’ or ‘kief.’



Marijuana concentrates. From the Dutch Medical Cannabis Program website <https://www.ncsm.nl>

- an oil, called hash oil, BHO, or ‘honey.’ Also called ‘cannabis e-liquid,’ when made for a vaping device.



This vape pen for cannabis e-liquid is sold by HONEY® one of many licensed adult use and medicinal cannabis companies.

Some of the extraction methods involve dangerous chemicals like butane or propane. Explosions have occurred in illicit home labs, and the finished products can contain traces of those chemicals if improperly made. The concentrated products contain very high amounts of THC; often as much as 50-80% (Zhu, 2016). Users who previously only smoked dried marijuana, or who have no experience with marijuana, may be unaware how strong the product is and consume too much. This could result in strong negative effects.

Concentrates have been added to food, drinks, tinctures, even skin creams for patients with a prescription for medical marijuana. The concentrates can be smoked, heated with a special type of bong (this is called ‘dabbing’) or placed into an electronic vaping device.

PARENTS AND SCHOOL OFFICIALS TAKE NOTE: MARIJUANA CONCENTRATES ARE EASY TO CONCEAL

Unlike conventional marijuana cigarettes or bongs, dabbing and vaping create a vapor that users inhale. There is virtually no ash or residue, no smoke, and no tell-tale marijuana odor. According to the 2016 National Youth Tobacco Survey (NYTS), nearly 1 in 11 U.S. students, including one-third of those who ever used e-cigarettes, had vaped a marijuana concentrate in 2016. There is a growing array of marijuana vaping devices and products available online and in retail stores in legal states—it is a fast-increasing market.

MARIJUANA IS PARTICULARLY HARMFUL TO THE DEVELOPING BRAINS OF CHILDREN AND TEENS

When teenagers use marijuana, the drug may reduce attention, memory, and learning (Kuepper, 2011). Effects

on these abilities may last a long time or even be permanent. This means that a teen using marijuana regularly may not do as well in school, may have trouble remembering things, and struggle with lifetime achievement. There is evidence that regular marijuana use increases the chance that a teenager will develop psychosis or schizophrenia, and they are four to seven times more likely than adults to develop a marijuana use disorder, or addiction (Kuepper, 2011). Studies also show that marijuana use by mothers during pregnancy or while nursing may be linked to problems with attention, memory, problem-solving skills, and behavior problems in their children (NIDA, 2018).



USERS CAN BE CAUGHT OFF-GUARD BY THE EFFECTS OF EDIBLES

Marijuana and its extracts can be added to food or drink. Decades ago, this was primarily limited to homemade baked goods. But the legalization of medical and recreational marijuana has spawned a booming industry of foods and beverages laced with THC called ‘edibles.’ Today you can find edibles in the form of candy, gum, hot sauce, peanut butter, coffee, beef jerky, ice cream, sodas, cookies, and more. In 2018, a Denver-based brewery announced plans to make cannabis-infused beer. Only people living in states with legal marijuana can buy edibles. But that has not stopped their illicit spread all across the U.S.

When marijuana is smoked or vaped, THC reaches the brain very quickly. When marijuana is ingested, however, the process is much slower. It can take between 30 minutes to 2 hours for edible marijuana to produce effects. Unaware users may consume too much if they don’t know this, or when trying to make effects happen faster. Also, it can be tricky to determine the correct dose of an edible.

NEWS AND NOTES



TEACHERS — WE NEED YOU!

The BRPC has developed a 45-60 minute learning activity for high school teachers to use with their students. Topics covered include drugs and other current substance abuse trends, poisons found in nature, and preventing childhood poisoning. The program includes a lesson plan, a Presenter’s Guide, and free give-aways.

We need volunteers to pilot test it in their own classrooms! Once the program has been tested and approved, we will make it available free to anyone who requests it. Interested parties should contact Kristin Wenger at KLW2S@VIRGINIA.EDU or 434-982-4386.



In honor of **NATIONAL POISONING PREVENTION WEEK, March 17-23, 2019**, the Blue Ridge Poison Center will be asking pharmacies to partner with us by including a poison center magnet and information about safe drug disposal in every prescription filled during the week. Last

year this same project reached over **44,000 households** during NPPW. Encourage your family pharmacy to participate! If you are a pharmacy employee, reach out to make sure you are on our mailing list so you don’t miss out: 434-982-4386 or KLW2S@VIRGINIA.EDU.

For example, one small square of chocolate may actually contain multiple doses of THC. Users who are not paying attention to the label might eat the whole product at once.

EDIBLES ARE REALLY TEMPTING TO CHILDREN

Young children are particularly at risk for exposure to marijuana in edibles, because the products look like familiar tasty treats. Children exposed to marijuana may have symptoms such as lethargy, problems walking and

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coordinating their movement, increased heart rate, and large pupils. States with legal marijuana are starting to pass packaging laws to help prevent childhood exposures. For example: as of October 1st, 2018, Colorado forbids edible packages from using the words “candy” or “candies.” Safer



Beware of mistaken identity. Marijuana edibles can appear to be harmless treats. Children are especially at risk of confusion.

packaging laws are a good idea, but alone will not protect children. Any marijuana product must be kept out of their sight and reach, preferably in a locked container stored up high.

THOUGH RARE, THERE COULD BE INTENSE NEGATIVE EFFECTS

Regular, long-term marijuana users may develop Cannabinoid Hyperemesis Syndrome. Symptoms include regular cycles of severe nausea, vomiting, and dehydration, sometimes requiring emergency medical attention. Marijuana can also trigger extreme psychotic reactions in some people (Kuepper, 2011).

WHEN IT COMES TO ANY ILLICIT DRUG, YOU HAVE NO IDEA WHAT YOU ARE REALLY GETTING.

Whether it's an 'ecstasy' pill purchased at a concert, a prescription pain pill given to you by an acquaintance, or a marijuana product, the likelihood that the product is contaminated with another substance is high. You cannot tell the strength, the purity, or the ingredients of illicitly-obtained drugs just by looking or by the reputation of the dealer. Even legal, regulated marijuana dispensaries are struggling to prove that their products meet consistent standards for THC content (Jikomes, 2018). Users, beware!

If you are interested in reading more about marijuana, edibles, and concentrates, and the latest information about medical marijuana, we recommend the Marijuana Drug Facts page on the website of the National Institute on Drug Abuse (NIDA). There is even a section just for teens. See <https://www.drugabuse.gov/publications/drugfacts/marijuana>.

We are happy to provide a list of references upon request. Please contact Kristin Wenger at KLW2S@VIRGINIA.EDU.



Poison Tivia Answer: Foxglove (*Digitalis purpurea*). The tall flower fronds are usually purple, but can also be pink or creamy white.

This free, quarterly newsletter is courtesy of the Blue Ridge Poison Center, serving Southwestern and Central Virginia and the Shenandoah Valley. We encourage you to print, post, forward, or share in any way, as long as The Blue Ridge Poison Center is credited. Archived issues can be found on our website: www.brpc.virginia.edu.

