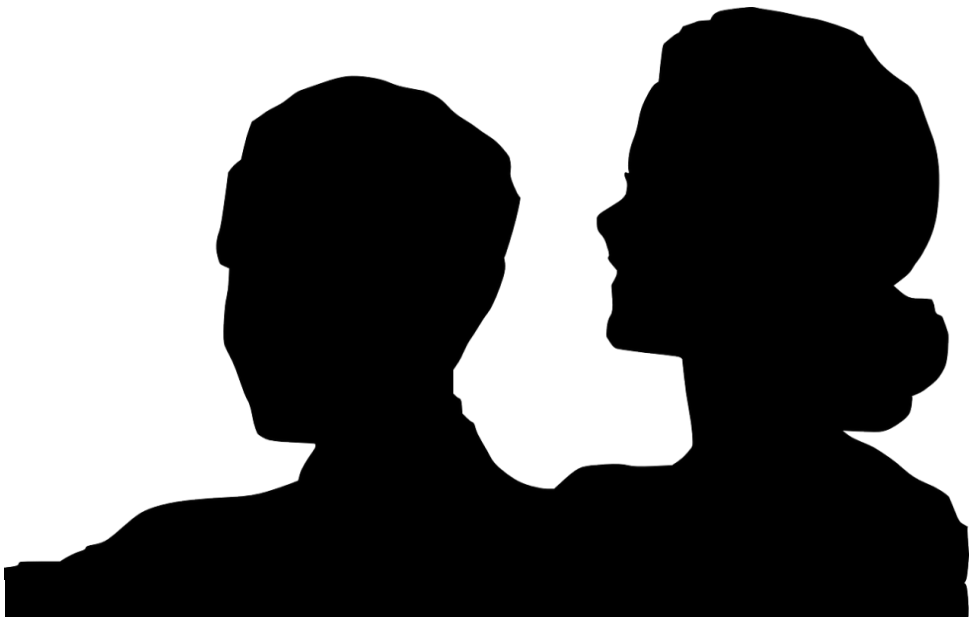


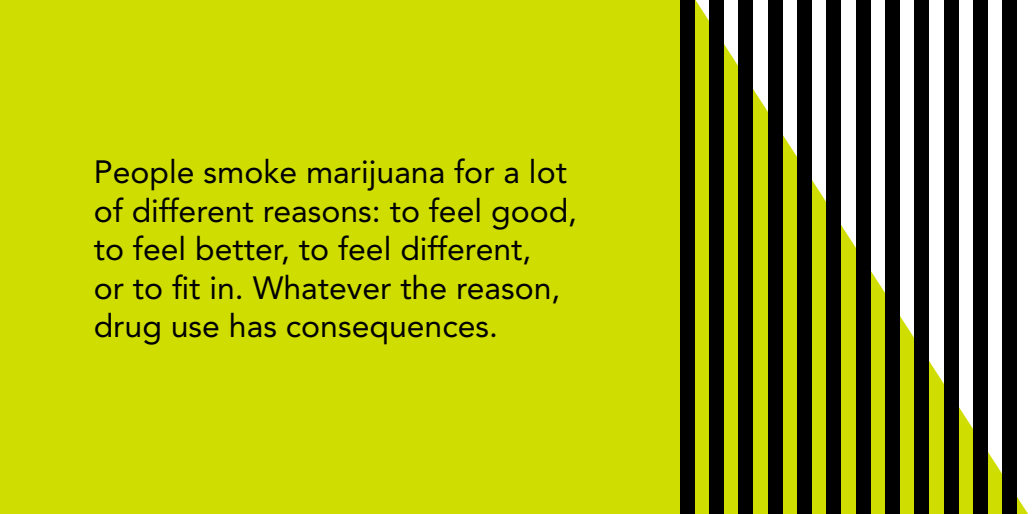


Mindful


Continuing Education

Marijuana Facts for Teens and Parents





People smoke marijuana for a lot of different reasons: to feel good, to feel better, to feel different, or to fit in. Whatever the reason, drug use has consequences.



To help you make an informed choice, the following are some brief summaries of what marijuana research is telling us. These topics represent the most popular questions and comments we get every day on our teen website and blog. Share them with your friends to help them separate fact from myth.



I. Some Things to Think About

Addiction

Marijuana can be addictive. Not everyone who smokes marijuana will become addicted—that depends on a whole bunch of factors, including your genes, the age you start using, whether you also use other drugs, your relationships with family and friends, success in school, and so on. Repeated marijuana use can lead to addiction, which means that people have trouble controlling their drug

use and often cannot stop even though they want to. Research shows that about 9 percent, or about 1 in 11, of those who use marijuana will become addicted. This rate increases to 17 percent, or about 1 in 6, in people who start in their teens, and goes up to 25 to 50 percent among daily users.

Driving

After alcohol, marijuana is the drug most often linked to car accidents, including those involving deaths.

A nationwide study of deadly crashes found that 36.9 percent of drivers who tested positive for drugs had used marijuana. Marijuana affects skills required for safe driving—alertness, concentration, coordination, and reaction time. Marijuana makes it hard to judge distances and react to signals and sounds on the road.

Wilson FA, Stimpson JP, Pagán, JA. Fatal crashes from drivers testing positive for drugs in the U.S., 1993-2010. *Public Health Rep.* 2014;129:342-350.



School

Marijuana is linked to school failure. Marijuana's negative effects on attention, memory, and learning can last for days and sometimes weeks—especially if you use it often. Someone who smokes marijuana daily may have a “dimmed-down” brain most or all of the time. Compared with teens who don't use, students who smoke marijuana tend to get lower grades and are more likely to drop out of high school. Research even shows that it can lower your IQ if you smoke it regularly in your teen years. Also, longtime marijuana users report lower life satisfaction, memory and relationship problems, poorer mental and physical health, lower salaries, and less career success.

Psychosis/Panic

High doses of marijuana can cause psychosis or panic when you're high. Some people experience an acute psychotic reaction (disturbed perceptions and thoughts, *paranoia*) or panic attacks while under the influence of marijuana. This reaction usually goes away as the drug's effects wear off. Scientists don't yet know if marijuana use causes lasting mental illness, although it can worsen psychotic symptoms in people who already have *schizophrenia*, a severe mental illness with symptoms such as hallucinations, paranoia, and disorganized thinking. It can increase the risk of long-lasting psychosis in some people.

Most teens do not
use marijuana.

II. Want to Know More? **Some FAQs About Marijuana**




What is marijuana? Are there different kinds?

Marijuana is a green, brown, or gray mixture of dried, shredded leaves, stems, seeds, and flowers of the hemp, or *Cannabis sativa*, plant. It goes by many different names—pot, herb, weed, grass—and stronger forms include sinsemilla (sin-seh-me-yah), hashish (*hash* for short), and hash oil.

How does marijuana work?

All forms of marijuana are mind altering (*psychoactive*). In other words, they change how the brain works. Marijuana contains more than 400 chemicals, including THC (*delta-9-tetrahydrocannabinol*). Since THC is the main active chemical in marijuana, the amount of THC in marijuana determines its potency, or strength, and therefore its effects. The THC content of marijuana has been increasing over the past few decades.



“I used to smoke pot until I had an anxiety attack and thought I couldn't breathe. . . I was wheezing, and I got really paranoid.”

“There are a million things to do that are more fun than smoking some unknown grass. Go to the beach, go to the movies, go to the gym—you are not missing anything.”

–Comments submitted to NIDA's blog for teens



How long does marijuana stay in your body?

Organs in the body have fatty tissues that quickly absorb the THC in marijuana. In general, standard urine tests can detect traces of THC several days after use. In heavy marijuana users, however, urine tests can sometimes detect THC traces for weeks after use stops.

Marijuana can be addictive. About 1 in 6 people who start using as teens and 25 to 50 percent of those who use it every day become addicted.

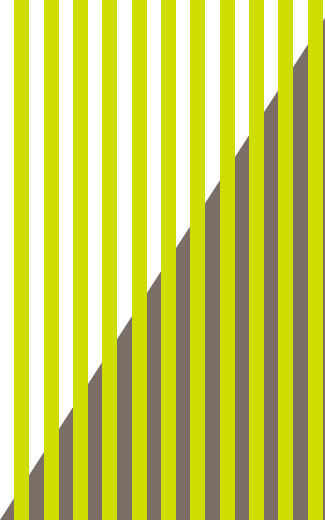




Does marijuana use lead to other drugs?

Long-term studies of drug use patterns show that most high school students who use other illegal drugs have tried marijuana first. However, many young people who use marijuana do not go on to use other drugs. To explain why some do, here are a few theories:

- Exposure to marijuana may affect the brain, particularly during development, which continues into the early 20s. Effects may include changes to the brain that make other drugs more appealing. For example, animal research suggests that early exposure to marijuana makes opioid drugs (like Vicodin® or heroin) more pleasurable.
- Someone who is using marijuana is likely to be in contact with other users and sellers of other drugs, increasing the risk of being encouraged or tempted to try them.
- People at high risk of using drugs may use marijuana first because it is easy to get (like cigarettes and alcohol).



“I was lazy a lot. I didn’t want to do things. . . I was depressed. I felt like I was always in a rut. I was always feeling bad about myself, where I was standing in life.”

–from Alby’s story, on his experiences as a daily marijuana smoker

What happens if you smoke marijuana?

Some people feel nothing at all when they smoke marijuana. Others may feel relaxed or “high.” Some experience sudden feelings of anxiety and paranoid thoughts (even more likely with stronger varieties of marijuana). Regular use of marijuana has also been linked to depression, anxiety, and a loss of drive or motivation, which means a loss of interest even in previously enjoyable activities. Its effects can be unpredictable, especially when mixed with other drugs.

In the short-term, marijuana can cause:

- problems with learning and memory
- distorted perception (sights, sounds, time, touch)
- poor coordination
- increased heart rate

Marijuana affects each person differently according to:

- biology (e.g., his or her genes)
- marijuana’s potency
- previous experience with the drug
- how the person uses it (smoked versus ingested)
- whether alcohol or other drugs are involved

How is marijuana likely to affect you?

Learning: Marijuana's effects on attention and memory make it difficult to learn something new or do complex tasks that require focus and concentration.

Sports: Marijuana affects timing, movement, and coordination, which can harm athletic performance.

Judgment: Marijuana, like most abused substances, can alter judgment. This can lead to risky behaviors that can expose the user to sexually transmitted diseases like HIV.

What does marijuana do to the brain?

We know a lot about where marijuana acts in the brain and how it affects specific sites called cannabinoid receptors. These receptors are found in brain regions that influence learning and memory, appetite, coordination, and pleasure. That's why marijuana produces the effects it does. Research suggests that the effects on memory, learning, and intelligence can be long term and even permanent in people who begin using marijuana regularly as teens. Lost mental abilities might not fully return even if a person quits using marijuana as an adult.

So, while we do know there are differences in the brains of marijuana users versus nonusers, we don't yet know what these differences mean or how long they last—especially if someone stops using the drug. One reason is that it's hard to find people who only smoke marijuana without using alcohol, which has its own negative effects on the brain.

Marijuana affects the brain — altering memory, judgment, and coordination.



How does smoking marijuana affect the lungs?

Someone who smokes marijuana regularly may have many of the same breathing and lung problems that tobacco smokers do, such as a daily cough and a greater risk of lung infections like pneumonia. As with tobacco smoke, marijuana smoke has a toxic mixture of gases and tiny particles that can harm the lungs. Although we don't yet know if marijuana causes lung cancer, many people who smoke marijuana also smoke cigarettes, which do cause cancer—and smoking marijuana can make it harder to quit cigarette smoking.

What is K2/Spice and how does it affect the brain?

K2/Spice refers to a wide variety of chemical-coated herbal mixtures that have effects similar to marijuana and that sellers advertise as both a "safe" and "legal" alternative to that drug. Neither is true. Although the labels on K2/Spice products often claim that they contain "natural" mind-altering material taken from a variety of plants, chemical analyses show that their active ingredients are man-made compounds. Although we don't yet fully know Spice's effects on the human brain, these compounds act in the same brain areas as THC. However, some chemicals in Spice—often of unknown origin—may produce more powerful and unpredictable effects, like extreme anxiety, paranoia, and hallucinations.

The chemicals in many products sold as K2/Spice are unknown. Some varieties could cause dramatically different effects than the user might expect.



Can marijuana use by the mother affect a developing fetus or newborn baby?

Doctors advise pregnant women not to use any drugs because they could harm the growing fetus. Studies suggest that children of mothers who used marijuana while pregnant may have subtle brain changes that can cause difficulties with problem-solving skills, memory, and attention. Mothers are also advised not to use marijuana while breastfeeding. Some research suggests that moderate amounts of THC are excreted into breast milk. We don't yet know how this affects a baby's developing brain.

Does marijuana produce withdrawal symptoms when someone quits using it?

Yes. The symptoms are similar in type and severity to those of nicotine withdrawal—irritability, problems sleeping, anxiety, and cravings—peaking a few days after regular marijuana use has stopped. Withdrawal symptoms can make it hard for someone to stay off marijuana.

What if a person wants to quit using marijuana?

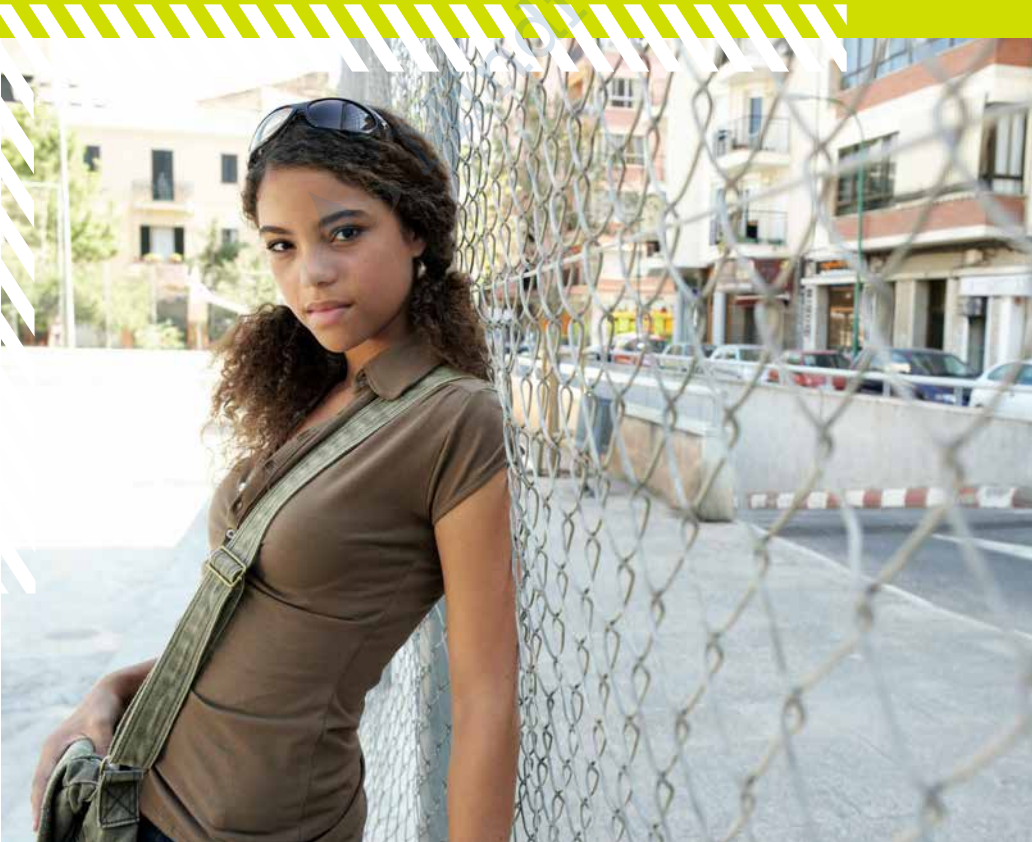
Researchers are testing different ways to help marijuana users stay off the drug, including some medications. Current treatment programs focus on counseling and group support systems. There are also a number of programs designed especially to help teenagers.

TJONES1 — JUNCTION CITY HIGH SCHOOL, OREGON:

If you're dating someone who does marijuana, does that increase your chance of doing it?

NIDA: Great question! Research shows that people who have friends who use drugs are more likely to use drugs themselves. But we don't really know why this is the case. It could be that by hanging out with drug users, you have more chances to try drugs. Certainly, you can choose not to try drugs if offered—but this can be a challenge. Another approach would be to see if your friend will stop using marijuana—for your benefit and his/hers.

—from NIDA's Chat Day



Isn't marijuana sometimes used as a medicine?

A number of states have passed laws allowing marijuana for medical use, but the Food and Drug Administration (FDA) has not approved the marijuana plant to treat any diseases. Even so, the marijuana plant contains ingredients that could have important medical uses. Currently, the FDA has approved two pill versions of THC to treat nausea in cancer chemotherapy patients and to stimulate appetite in some patients with AIDS. Also, a new product that is a chemically controlled mixture of THC and *cannabidiol* (another chemical found in the marijuana plant) is available in several countries outside the United States as a mouth spray. However, it's important to remember that because marijuana is usually smoked into the lungs and has ingredients that can vary from plant to plant, its health risks may outweigh its value as a treatment. Scientists continue to investigate safe ways that patients can use THC and other marijuana ingredients as medicine.



Scientists continue to investigate safe ways that patients can use THC and other marijuana ingredients as medicine.



III. Other Useful Resources

Here are some helpful places to go for more information:

The National Institute on Drug Abuse (NIDA)

The NIDA website www.drugabuse.gov has information on a variety of drugs and related topics. NIDA's teen site www.teens.drugabuse.gov covers a lot of ground, with free downloads, entertaining and informative videos and games, and our blog for teens, where you can leave us a comment or two. Get the scoop on how different drugs affect the brain and body, and read real stories from teens who have struggled with drug abuse and addiction.

The National Institute on Alcohol Abuse and Alcoholism (NIAAA)

The NIAAA website www.niaaa.nih.gov contains the latest research, news, and other resources related to alcohol. NIAAA even has a site especially for young teens called "the cool spot," www.thecoolspot.gov, with quizzes and other interactive resources that give you information on alcohol and resisting peer pressure.

The National Institute of Mental Health (NIMH)

To learn more about mental health disorders like depression or schizophrenia, visit the NIMH website at www.nimh.nih.gov and read the Director's Blog on various topics that include suicide prevention, bipolar and borderline personality disorders, coping with traumatic events, and more.

A Letter to Parents

We at the National Institute on Drug Abuse (NIDA) are pleased to offer two short guides for parents and their children to review the scientific facts about marijuana: (1) [*Marijuana: Facts Parents Need to Know*](#) and (2) [*Marijuana: Facts for Teens*](#). Although it's best to talk about drugs when children are young—when drug use often begins—it's never too late to start the conversation.

Marijuana remains the most used illegal substance among youth. By the time they graduate from high school, about 45 percent of U.S. teens will have tried marijuana at least once in their lifetime. In 2015, nearly 22 percent of high school seniors reported current marijuana use, and 6 percent used marijuana daily. The annual Monitoring the Future survey has been tracking teen attitudes and drug use since 1975. Currently, the number of teens who think marijuana use is harmful is declining. This is concerning because there is growing scientific evidence that heavy, regular use of marijuana that begins during the teen years may lower a person's IQ and interfere with other aspects of functioning and well-being. The good news is that marijuana use did not increase significantly among youth from 2010 to 2015.

Survey results show that we still have a long way to go in our efforts to prevent marijuana use and avoid the toll it can take on a young person's life. NIDA recognizes that parents have an important role in this effort and can strongly influence their children's attitudes and behaviors. However, the subject of marijuana use has become increasingly difficult to talk about—in part because of the mixed messages being sent by the passage of medical marijuana laws and legalization of marijuana in some states. In addition, many parents may have used marijuana when they were younger, which could make talking openly and setting rules about its use more difficult.

Talking to our children about drug use isn't always easy, but it is crucial. You can also get involved in your community and seek out drug abuse prevention programs that you and your child can participate in together. Sometimes, just beginning the conversation is the hardest part. I hope these booklets can help.

A handwritten signature in black ink, appearing to read 'N. Volkow', is written over a faint, diagonal watermark that says '© 2014 Ministry of Health'.

Nora D. Volkow, M.D.
Director
National Institute on Drug Abuse

Introduction

Why do young people use marijuana? Young people start using marijuana for many reasons. Curiosity, peer pressure, and the desire to fit in with friends are common ones. Those who have already begun to smoke cigarettes or use alcohol—or both—are at increased risk for marijuana use as well. And people who have untreated mental health disorders (such as depression, anxiety, conduct disorder, or ADHD) or who have experienced trauma are at increased risk of using marijuana and other drugs at an early age.

For some, drug use begins as a means of coping with anxiety, anger, depression, boredom, and other unpleasant feelings. But, in fact, being high can be a way of simply avoiding the problems and challenges of growing up. Research also suggests that family members' use of alcohol and drugs plays a strong role in whether a young person starts using drugs. Parents, grandparents, and older siblings are models that children follow.

Indeed, all aspects of a teen's environment—home, school, and community—can influence whether he or she will try drugs.

How can I prevent my child from using marijuana?

There is no magic bullet for preventing teen drug use. But research shows parents have a big influence on their teens, even when it doesn't seem that way. Talk openly with your children and stay actively engaged in their lives. To help you get started, the next section provides some key points about marijuana research findings that you can share with your kids to help them sort out fact from myth and help them make the best decisions they can. These key points address the types of questions and comments that we receive from teens every day on our NIDA for Teens website and blog. Following that brief section, the FAQs and additional resources will equip you with even more information.

Did you know?

Marijuana can be addictive. Despite contrary belief, repeated marijuana use can lead to addiction, which means that people often have trouble stopping use of a drug when they want to, even though it is having a negative impact on their lives. Research suggests that about 9 percent of people who use marijuana develop an addiction. This rate nearly doubles to 17 percent when marijuana use begins during the teen years. Among youth receiving substance use disorder treatment, marijuana accounts for the largest percentage of admissions—about 55 percent among those 12 to 17 years old.

Marijuana is unsafe if you're behind the wheel.

Marijuana impairs judgment and many other skills needed for safe driving: alertness, concentration, coordination, and reaction time. Marijuana use makes it difficult to judge distances and react to signals and sounds on the road. Marijuana is the most commonly identified illegal drug in deadly crashes, sometimes in combination with alcohol or other drugs. By itself, marijuana is thought to roughly double a driver's chances of being in a crash, and the combination of marijuana and even small amounts of alcohol is even more dangerous—more so than either substance alone.

Marijuana is linked to lower grades, school failure, and poorer quality of life. Marijuana has negative effects on attention, motivation, memory, and learning that can persist after the drug's immediate effects wear off—especially in people who use regularly. Someone who uses marijuana daily may be functioning at a reduced intellectual level most or all of the time. Recent research has shown that people with persistent marijuana use disorder who began using marijuana heavily as teens permanently lost an average of 6 or up to 8 IQ points by mid-adulthood. Compared with their nonsmoking peers, students who use marijuana tend to get lower grades and are more likely to drop out of high school. People who use marijuana regularly for a long time report decreased overall life satisfaction, including poorer mental and physical health, memory and relationship problems, lower salaries, and less career success.

Marijuana is linked to some mental illnesses. Although scientists don't yet fully understand how the use of marijuana may impact the development of mental illness, high doses can bring on an acute *psychosis* (thinking that is detached from reality, sometimes including hallucinations) or panic attack. In people who already have *schizophrenia* (a severe mental disorder with symptoms such as hallucinations, paranoia, and disorganized thinking), marijuana use can worsen these symptoms. Also, evidence suggests that early marijuana use may increase the risk of psychotic disorders among those at higher genetic risk for these disorders.

What is marijuana? Are there different kinds?

Marijuana is a green, brown, or gray mixture of dried, shredded leaves, stems, seeds, and flowers of the hemp plant (*Cannabis sativa*). Cannabis is a term that refers to marijuana and other drugs made from the same plant. Strong forms of cannabis include sinsemilla, hashish ("hash" for short), and hash oil. There are many different slang terms for marijuana and, as with other drugs, they change quickly and vary from region to region. But no matter its form or label, all cannabis products contain the *psychoactive* (mind-altering) chemical *delta-9-tetrahydrocannabinol* (THC). They also contain more than 400 other chemicals.

How do people use marijuana?

People who use marijuana may roll loose marijuana leaves into a cigarette (called a joint) or smoke it in a pipe or a water pipe, often referred to as a bong. Some people mix marijuana into foods (often called "edibles") or use it to brew a tea. Another method is to slice open a cigar and replace some or all of the tobacco with marijuana, creating what is known as a blunt. To avoid inhaling smoke, more people are vaping—using vaporizers that allow the person to inhale vapor and not smoke. Another popular method on the rise is smoking or vaping THC-rich resins extracted from the marijuana plant, a practice called dabbing. Some popular e-cigarette devices can be used to vape marijuana or extracts.

How many teens use marijuana?


NIDA's annual Monitoring the Future survey reports that among students from 8th, 10th, and 12th grades, marijuana use has remained stable over the past few years. For the three grades combined, about 24 percent of students reported past-year use in 2015. About 7 percent of 8th

graders reported current (past-month) use. Among 10th graders, 15 percent reported current use, and current use for 12th graders was 21 percent.

Researchers have found that the use of marijuana and other drugs usually peaks in the late teens and early twenties, then declines in later years. Therefore, marijuana use among young people remains a natural concern for parents and is the focus of continuing research, particularly regarding its impact on brain development, which continues into a person's early twenties. Some studies suggest that the effects of heavy use that begins as a teen can be long lasting, even many years after use discontinues.

How does marijuana work?

When people smoke marijuana, they feel its effects almost immediately. THC (marijuana's psychoactive ingredient) rapidly reaches every organ in the body, including the brain, and attaches to specific receptors on nerve cells. Activation of these receptors in the brain affects pleasure, memory, thinking, concentration, movement, coordination, appetite, pain, and sensory and time perception. THC is chemically similar to chemicals that the body produces naturally, called *endocannabinoids*, and marijuana disrupts the normal function of these chemicals. Because of this system's wide-ranging influence over many critical functions, it's not surprising that marijuana can have multiple effects—not just on the brain, but on a person's general health. Some of these effects last only as long as marijuana is in the body while others may build up over time to cause longer-lasting problems, including addiction. The effects of smoked marijuana can last from 1 to 3 hours. If consumed in foods, the effects come on slower and may not last as long. However, because edibles containing marijuana are often unlabeled or poorly labeled, teens can use too much waiting for the "high" and end up in the emergency room with side effects.



About

**45 PERCENT
OF TEENS**

have used marijuana
before they graduate
from high school.

What are marijuana's short-term effects?

The short-term effects of marijuana can include:

Euphoria (high). THC activates the reward system in a similar way to other drugs of abuse, resulting in the release of the chemical dopamine.

Memory impairment. THC alters how information is processed in the hippocampus and frontal cortex, brain areas involved in memory and concentration.

Negative mental reactions in some. These include anxiety, fear, distrust, or panic, particularly in people new to the drug or those taking it in a strange setting; some may even experience psychosis.

Physical changes. People who use marijuana may have red or bloodshot eyes, increased appetite ("the munchies"), increased heart rate, and sleep issues.

What determines how marijuana affects a person?

Like any other drug, marijuana's effects on a person depends on a number of factors, including the person's previous experience with the drug or other drugs, biology (e.g., genes), gender, how the drug is taken, and the drug's potency (its strength).

How important is marijuana potency?

Potency—determined by the amount of THC contained in the marijuana—has received much attention lately because it's been increasing steadily in the past few decades. These findings are based on analyses of marijuana samples seized by law enforcement.

So what does this actually mean? For someone new to the drug, it may mean exposure to higher concentrations of THC, with a greater chance of a negative or unpredictable reaction. In fact, increases in potency may account for the rise in emergency room visits involving marijuana use. For those more experienced with marijuana, it may mean a greater risk for addiction if they are exposing themselves to high doses on a regular basis. However, the full range of consequences linked with marijuana's higher potency is not well understood. It is unknown how much people who use marijuana adjust for the increase in potency by using less.

Does using marijuana lead to other drug use?

Long-term studies of high school students' patterns of drug use show that most young people who use other drugs have first tried marijuana, alcohol, or tobacco. For example, young people who have used marijuana are at greater risk of using cocaine than those who have not. We also know from animal studies that rats given repeated doses of THC show heightened behavioral responses and altered brain activation not only when further exposed to THC, but also when exposed to other drugs such as



MARIJUANA CAN BE

ADDICTIVE.

People who begin using marijuana before age 18 are 4 to 7 times more likely than adults to develop problem use.

A close-up, grayscale photograph of medical equipment, specifically a drip chamber and various tubes. A hand is visible in the lower-left corner, holding a white plastic component of the device. The background is blurred, focusing attention on the mechanical parts.

HIGHER POTENCY

may explain the rise in emergency room visits involving marijuana use.

morphine. Researchers are now looking at the possibility that exposure to marijuana as a teen may cause changes in the brain that make a person more likely to get addicted to marijuana or other drugs, such as alcohol, opioids, or cocaine.

It is important to point out, however, that research has not fully explained any of these observations, which are complex and likely to involve a combination of biological, social, and psychological factors. In addition, most people who use marijuana do not go on to use "harder" drugs.

Does smoking marijuana cause lung cancer?

Studies have not found an increased risk of lung cancer in marijuana smokers compared with nonsmokers. However, marijuana smoke does irritate the lungs and increases the likelihood of other breathing problems. Repeated exposure to marijuana smoke can lead to daily cough, more frequent chest colds, and a greater risk of lung infections. Moreover, many people who smoke marijuana also smoke cigarettes, which do cause cancer, and quitting tobacco can be harder if the person uses marijuana as well.

Can marijuana produce withdrawal symptoms when someone quits?

Yes. Many people who use the drug long term and then stop have symptoms that are similar to those of nicotine withdrawal—irritability, sleep problems, anxiety, and craving—which may prompt relapse (a return to drug use). Withdrawal symptoms are generally mild and peak a few days after use has stopped. They gradually disappear within about 2 weeks. While these symptoms do not pose an immediate threat to health, they can make it hard for someone to stop using the drug.

How harmful is K2/Spice (or "synthetic marijuana")?

Spice, which is sometimes also called K2, herbal incense, or "fake weed," consists of shredded dried plant material that has been sprayed with chemicals designed to act on the same brain cell receptors as THC, but are often much more powerful and unpredictable. Spice products are labeled "not fit for human consumption," and many are now illegal. But their manufacturers are constantly creating new chemical compounds to sidestep legal restrictions. Their effects, like the ingredients, often vary, but emergency rooms report large numbers of young people appearing with rapid heart rates, vomiting, and negative mental responses including hallucinations after using these substances.

Are there treatments for people addicted to marijuana?

Behavioral therapies are available and are similar to those used for treating other substance addictions. These include motivational enhancement to develop people's own motivation to stay in treatment; cognitive behavioral therapies to teach strategies for avoiding drug use and its triggers and for effectively managing stress; and motivational incentives, which provide vouchers or small cash rewards for staying drug free.

However, there are currently no medications approved by the U.S. Food and Drug Administration (FDA) for treating marijuana addiction, although promising research is under way to find medications to treat withdrawal symptoms and ease craving and other effects of marijuana.

People who use
marijuana may develop

RESPIRATORY

PROBLEMS

such as chronic cough
and more frequent
chest colds.



MARIJUANA

AFFECTS

THE BRAIN

and leads to impaired short-term memory, perception, judgment, and motor skills.

What are other risks related to marijuana that my child should know?

Many parents and teens may not have thought about some of these risks:

- As with most drugs, marijuana use interferes with judgment, which can lead to risky behaviors. For example, the person may drive under the influence or ride with someone else who is intoxicated and get into a car crash, or engage in risky sexual behavior and contract a sexually transmitted disease.
- In addition to psychosis, regular marijuana use has been linked to increased risk for several mental problems, including depression, anxiety, suicidal thoughts, and personality disturbances. One of the potential effects is *amotivational syndrome*—a diminished or lost drive to engage in formerly rewarding activities. Whether this syndrome is a disorder unto itself or is a subtype of depression associated with marijuana use remains controversial. Furthermore, whether marijuana causes these problems or is a response to them is still unknown. More research is needed to confirm and better understand these links.
- Marijuana use during pregnancy may harm the developing fetus. Research suggests that marijuana use during pregnancy may be linked to subtle neurological changes and, later in childhood, to reduced problem-solving skills, memory, and attention. However, the fact that pregnant women who use marijuana are also more likely to smoke cigarettes or drink alcohol makes it difficult to determine exactly how much of these effects are due to marijuana. In addition, some research suggests that after pregnancy, THC passes into the breast milk of nursing mothers in moderate amounts. Researchers don't yet know how this affects the baby's developing brain.

Is marijuana medicine?

There has been much debate about the possible medical use of marijuana for certain conditions. A growing number of states have legalized marijuana for medical use, but the FDA, which assesses the safety and effectiveness of medications, hasn't approved marijuana as a medicine. There haven't been enough large-scale studies (clinical trials) showing that the benefits of the whole plant outweigh its risks in the patients it's meant to treat. To be approved, medicines need to have well-defined and measurable ingredients that are consistent from one dose (such as a pill or injection) to the next. In addition to THC, the marijuana leaf contains more than 400 other chemical compounds, which may have different effects in the body and which vary from plant to plant. This makes it difficult to consider its use as a medicine even if some of marijuana's specific ingredients may offer benefits.

However, THC itself is an FDA-approved medication. Two medicines in pill form (dronabinol [synthetic THC] and nabilone [a synthetic chemical similar to THC]) are available to treat nausea during cancer chemotherapy and boost appetite in people with AIDS. Scientists continue to investigate the medicinal properties of THC and other cannabinoids to better evaluate and harness their ability to help patients suffering from a broad range of conditions.




**DRIVING WHILE HIGH
CAN LEAD TO**

CAR

CRASHES.

Marijuana can have harmful effects on many of the skills required for driving a car.



Regular marijuana use
has been associated with several

MENTAL HEALTH PROBLEMS,

including depression, anxiety,
and suicidal thoughts. It is not
yet known if this is caused by
marijuana use or is related to
common risk factors.

How can I tell if my child has been using marijuana?

Parents should be aware of changes in their child's behavior, such as not brushing hair or teeth, skipping showers, mood changes, and loss of relationships with family members and friends. In addition, changes in grades, skipping classes or missing school, loss of interest in sports or other favorite activities, a change in peer group, changes in eating or sleeping habits, and getting in trouble in school or with the law could all be related to drug use—or may indicate other problems. See the list of specific warning signs for marijuana use below.

If your child is using marijuana, he or she might:

- ✦ seem unusually giggly and/or uncoordinated
- ✦ have very red, bloodshot eyes or use eye drops often
- ✦ have a hard time remembering things that just happened
- ✦ have drugs or drug paraphernalia—drug-related items including pipes and rolling papers—possibly claiming they belong to a friend if confronted
- ✦ have strangely smelling clothes or bedroom
- ✦ use incense and other deodorizers
- ✦ wear clothing or jewelry or have posters that promote drug use
- ✦ have unexplained lack of money or extra cash on hand

As this guide has shown, marijuana use can affect the health and well-being of children and teens at a critical point in their lives—when they are growing, learning, maturing, and laying the foundation for their adult years. As a parent, your children look to you for help and guidance in working out problems and in making decisions, including the decision not to use drugs. Even if you have used drugs in the past, you can have an open conversation about the dangers. Whether or not you tell your child about your past drug use is a personal decision. But experience can better equip us to teach others by drawing on the value of past mistakes. You can explain that marijuana is significantly more potent now and that we now know a lot more about the potential harmful effects of marijuana on the developing brain.

Greater acceptance of marijuana use, compared with use of other illegal drugs, continues to be the basis of differing opinions about its dangers, legal status, and potential value. The ongoing public debate about medical marijuana may complicate your discussion. Even so, be certain the discussion focuses on how much you care about your child's health.

Whether or not marijuana becomes legal for adult use or allowed for medical use, it can be harmful for teens and can alter the course of a young life, preventing a person from reaching his or her full potential. That's reason enough to have this sometimes difficult conversation with your children. We hope this guide encourages and helps parents to begin the dialogue and, more importantly, to keep the channels of communication open.

There are numerous resources, many right in your own community, where you can get information to help you talk to your children about drugs. Consult your local library, school, or community service organization. You may also contact the government organizations listed below.

National Institute on Drug Abuse (NIDA)

NIDA, as part of the National Institutes of Health, offers an extensive collection of publications, videos, and educational materials to help parents talk to their children about drug use. Resources include:

- **Family Checkup** (www.drugabuse.gov/family-checkup), which provides parents with research-based skills, including conversation tips on video, to help keep their children drug free
- **Drugs: Shatter the Myths** (www.drugabuse.gov/publications/drugs-shatter-myths), which parents can give to their teens to help answer frequently asked questions about drugs and drug abuse
- **Step-by-Step Guide** (www.drugabuse.gov/related-topics/treatment/what-to-do-if-your-teen-or-young-adult-has-problem-drugs), which offers guidance on what parents can do if their teen or young adult has a drug use problem

Visit our Parents & Educators page (www.drugabuse.gov/parents-educators) for a list of other materials.

NIDA has more information about marijuana and other drugs on both our main website and our NIDA for Teens site: www.drugabuse.gov and www.teens.drugabuse.gov.

Select NIDA publications are available free of charge through the NIDA DRUGPUBS Research Dissemination Center.

website: <https://drugpubs.drugabuse.gov>

email: drugpubs@nida.nih.gov

phone: 1.877.NIDA.NIH (1.877.643.2644) or 240.645.0228

National Institute on Alcohol Abuse and Alcoholism (NIAAA)

Visit NIAAA at www.niaaa.nih.gov for information about a variety of alcohol-related issues, which frequently intersect with other drug use problems.

National Institute of Mental Health (NIMH)

NIMH (www.nimh.nih.gov) provides the latest research findings and numerous other resources covering a variety of mental health disorders, which often co-occur with drug abuse.

Substance Abuse and Mental Health Services Administration (SAMHSA)

SAMHSA's treatment locator (<http://findtreatment.samhsa.gov>) can help you find a drug abuse or alcohol treatment program near you. Visit www.samhsa.gov for more information about drug abuse prevention and treatment policies, programs, and services.

Drug Enforcement Administration (DEA)

Visit www.dea.gov for information about various drugs, controlled substances laws (including drug scheduling), and U.S. regulations. The DEA offers two resources specifically intended for parents and teens:

- Get Smart About Drugs: www.getsmartaboutdrugs.com
- Just Think Twice: www.justthinktwice.com

Tips for Parents

- Be a good listener.
- Set clear expectations about drug and alcohol use, including real consequences for not following family rules.
- Help your child deal with peer pressure to use drugs.
- Get to know your child's friends and their parents.
- Monitor your child's whereabouts.
- Supervise teen activities.
- Talk to your child often.





Mindful

Continuing Education

"This course was developed from the public domain document: Marijuana: Facts for Teens and Marijuana: Facts Parents Need to Know – National Institute on Drug Abuse, National Institutes of Health, U.S Department of Health and Human Services (2016)."