A Letter to Parents

Although NIDA’s annual Monitoring the Future survey shows that daily marijuana use in teens is mostly steady, the survey also shows that as cigarette smoking rates drop, daily marijuana smoking has become generally more common than daily cigarette smoking among teens. By the time they graduate high school, about 45 percent of teens have tried marijuana at least once in their lifetime, a rate that has remained relatively steady for the past two decades. The survey also reports that high school seniors in states with medical marijuana laws are more likely to have vaped marijuana and consumed marijuana edibles than their counterparts in states without such laws.

Additionally, 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 can interfere with aspects of functioning and well-being.

Survey results show that we still have a long way to go in our efforts to prevent teen 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 discuss—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 it more challenging to discuss openly or set rules about its use.

Talking to our children about drug use isn’t always easy, but it is crucial. We are pleased to offer this short guide to review with your children. We have a similar booklet, called Marijuana: Facts for Teens, that you can also share. Sometimes, just beginning the conversation is the hardest part. I hope these booklets can help.

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A Letter to Parents

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Marijuana is linked to school failure, lower income, and poorer quality of life.

Marijuana is linked to some mental illnesses.

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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 who have untreated mental health conditions (such as depression, anxiety, or ADHD), or who have experienced trauma are at increased risk for marijuana use.

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

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

How can I prevent my child from using marijuana?

There is no quick or simple solution 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 Drugs and Health 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 common belief, repeated marijuana use can lead to addiction, which means that people can have trouble quitting, even if it is having a negative impact on their lives. Research suggests that about 30 percent of people who use marijuana have some level of marijuana use disorder even if they are not yet addicted.¹ People who begin using marijuana before the age of 18 are more likely to develop a marijuana use disorder than adults.² Among youth receiving substance use disorder treatment, marijuana accounts for the largest percentage of admissions—almost 50 percent among those 12 to 17 years old.³

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 dangerous⁴,⁵—more so than either substance alone.⁶

Marijuana is linked to school failure, lower income, 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. Compared with their nonsmoking peers, students who use marijuana 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 might impact the development of mental illness, high doses can bring on a panic attack or even acute psychosis—thinking that is detached from reality, sometimes including hallucinations. In people who already have the severe mental illness schizophrenia (involving symptoms such as hallucinations, paranoia, and disorganized thinking), marijuana use can worsen its symptoms. Also, evidence suggests that early marijuana use may increase the risk of psychotic disorders among those at higher genetic risk for these disorders.


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II. Want to know more? Some FAQs About Marijuana
What is marijuana? What is cannabis?

Marijuana refers to the dried leaves, flowers, stems, and seeds from the *Cannabis sativa* or *Cannabis indica* plant. The terms cannabis and marijuana are often used interchangeably. Extracts from the plant can be made into hash oil or wax. Cannabis products contain the mind-altering chemical *delta-9-tetrahydrocannabinol* (THC). They can 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 (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. Some people are vaping—using electronic vaporizers (called e-vaporizers or vapes) that allow people to inhale vapor and not smoke. Another popular method on the rise is vaping THC-rich resins extracted from the marijuana plant, an often dangerous practice called dabbing.

How many teens use marijuana?

NIDA’s annual Monitoring the Future survey reports that marijuana use has remained stable over the past few years among 8th, 10th, and 12th grade students. About 10 percent of 8th graders, 26 percent of 10th graders, and 37 percent of 12th graders reported using marijuana in the last year. At the same time, teens are developing more positive attitudes about using marijuana, with 71 percent of high school seniors saying they do not view regular marijuana smoking as very harmful.9

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. Researchers are studying how long marijuana’s effects last and if the changes could be permanent.

How does marijuana produce the high?

When people smoke marijuana, they feel its effects almost immediately. The psychoactive chemical THC spreads to every organ in the body, including the brain, and attaches to specific receptors on nerve cells. This affects the areas of the brain that control pleasure, memory, thinking, concentration, movement, coordination, appetite, pain, and sensory and time perception.

THC is structurally similar to chemicals produced naturally by the body, called endocannabinoids, which play a role in normal brain development and function. Because of the endocannabinoid system’s wide-ranging influence over many critical functions, 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.

Although detectable amounts of THC can remain in the body for days or even weeks after use, the noticeable effects of smoked marijuana usually last from 1 to 3 hours. If consumed in foods, the effects come on slower and can last for many hours.

What are marijuana's effects on the brain, body, and behavior?

Short-term effects (while using or right after using)

- learning, attention, and memory problems
- distorted perception (sights, sounds, time, touch)
- poor coordination and motor skills
- increased heart rate
- anxiety, paranoia
- psychosis (not common)

Effects that last longer than the short term (a few days) but may not be permanent

- learning and memory problems
- sleep problems
Long-term effects (effects of repeated use)

- risk of marijuana addiction
- long-term learning and memory problems if heavy use begins during youth
- risk for chronic cough, bronchitis
- risk of schizophrenia in some people with higher genetic risk
- in rare cases, risk of recurrent episodes of severe nausea and vomiting

What determines how marijuana affects an individual?

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

How important is marijuana potency?

Potency—the amount of THC contained in the marijuana—has been increasing steadily in the past few decades as marijuana farmers respond to market demand. 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. 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?

The majority of people who use marijuana do not go on to use other “harder” substances, like cocaine or heroin. However, some research shows that people often try marijuana before trying other substances.\(^\text{10}\) 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 morphine.\(^\text{11}\) Researchers are now looking at the possibility that exposure to marijuana as a teen can cause changes in


People who begin using marijuana before age 18 are more likely to develop marijuana use disorder than adults.

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.
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.

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 lung and breathing problems.\textsuperscript{12,13} Moreover, many people who smoke marijuana also smoke cigarettes, which do cause cancer, and research suggests that quitting tobacco can be harder if the person uses marijuana.

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, decreased appetite and various forms of physical discomfort—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.\textsuperscript{14,15} While these symptoms do not pose an immediate threat to health, they can make it hard for someone to stop using the drug. Because withdrawal is not as obvious or as painful as withdrawal symptoms from some other drugs such as opioids, many people do not realize that stopping marijuana use can cause withdrawal symptoms.


How harmful is K2/Spice (or “synthetic cannabinoids”)?

Synthetic cannabinoids, which are sometimes also called K2 or Spice, consist of many human-made mind-altering chemicals that are either sprayed on dried, shredded plant material to be smoked, or sold as liquids to be inhaled in e-vaporizers. These chemicals are called cannabinoids because they have chemicals that act on the same brain cell receptors as THC, but are often much more powerful and unpredictable. Because of this similarity, synthetic cannabinoids are sometimes misleadingly called “synthetic marijuana” (or “fake weed”), and are often labeled “not fit for human consumption.” 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. Some states are reporting an increased number of overdose cases involving synthetic cannabinoid products where users are experiencing severe bleeding, likely due to product contamination.

Are there treatments for people addicted to marijuana?

Behavioral therapies are available and are similar to those used for treating other drug or alcohol addictions. These include motivational enhancement therapies 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 showing up for treatment and staying drug free.

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.
Most teens DON'T USE MARIJUANA
Regular marijuana use AFFECTS THE BRAIN and leads to impaired memory, 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 many misused drugs, marijuana use interferes with judgment, which can lead to risky behaviors. For example, someone using marijuana might drive under the influence or ride with someone else who is intoxicated and get into a car crash, or might engage in risky sexual behavior and contract a sexually transmitted infection.

- Regular marijuana use has been linked with increased risk for several mental problems, including depression, anxiety, suicidal thoughts, personality disturbances, and psychosis. Whether or not marijuana causes these problems, or is a response to them, is still unknown. More research is needed to confirm and better understand these links.

- Research suggests that marijuana use during pregnancy may be linked to future developmental and hyperactivity disorders. 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. More research is needed to learn how this affects the baby’s developing brain. The American College of Obstetricians and Gynecologists recommends against using marijuana during pregnancy.


Is marijuana medicine?

Research shows that some chemicals in marijuana, THC as well as cannabidiol (CBD), could have medical uses. The FDA has approved some THC-based medications to treat nausea in patients undergoing chemotherapy and to help patients with AIDS gain an appetite. However, these medications are not smoked. The FDA has also approved a CBD oil-based medication to treat rare and severe forms of epilepsy. Additional clinical trials are being conducted to develop medications that contain THC and/or CBD for pain relief and seizure disorders.

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, changes in mood, and challenging relationships with family members, and a change in friends. In addition, changes in grades, skipping classes or missing school, loss of interest in sports or other favorite activities, changes in eating or sleeping habits, and getting in trouble in school or with law enforcement 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
Using cutting-edge imaging technology, scientists from the Adolescent Brain Cognitive Development (ABCD) Study will look at how childhood experiences, including use of any drugs, interact with each other and with a child’s changing biology to affect brain development and social, behavioral, academic, health, and other outcomes. As the only study of its kind, the ABCD study will yield critical insights into the foundational aspects of adolescence that shape a person’s future.

These brain images show the reward-related circuity in the cortical and subcortical regions of the brain that tend to be more active when a person is successful at achieving a reward. While all of the images show the regions of the brain that are active to reward, the regions in yellow and red are the most active.

Courtesy of the ABCD Study. Adapted from Casey et al., 2018. https://doi.org/10.1016/j.dcn.2018.03.001
III. Starting the Conversation

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.
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. Whether or not marijuana is legal for adult use or allowed for medical use in your state, 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. Be certain the discussion focuses on how much you care about your child’s health.

We hope this guide encourages and helps parents to begin the dialogue and, more importantly, to keep the channels of communication open.

Want to become involved? Consider coordinating an event during National Drug and Alcohol Facts Week using free NIDA materials or contact us at drugfacts@nida.nih.gov. See https://teens.drugabuse.gov/national-drug-facts-week.
IV. Other Useful Resources
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, education materials, and videos to help parents talk to their children about drug use. Free resources include:

- **Family Checkup**, which provides parents with research-based skills, including conversation tips on video, to help their children make good personal choices
- **Drugs: Shatter the Myths**, which parents can give to their teens to help answer frequently asked questions about drugs and drug abuse
- **Step-by-Step Guide**, which offers guidance on what parents can do if their teen or young adult appears to have a drug use problem
- **Principles of Substance Abuse Prevention for Early Childhood**, which addresses the ways in which early inter-ventions have positive effects on development

Visit our Parents & Educators page 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.

To order this and other NIDA publications, please visit drugpubs.drugabuse.gov.
National Institute on Alcohol Abuse and Alcoholism (NIAAA)

Visit NIAAA at niaaa.nih.gov for information about a variety of alcohol-related issues, which frequently intersect with other drug use problems. NIAAA even has a site specifically for young teens called “the cool spot,” www.thecoolspot.gov, which has lessons designed for use in students ages 11 to 13.

National Institute of Mental Health (NIMH)

NIMH (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 can help you find a drug or alcohol treatment program near you. Visit samhsa.gov for more information about substance use disorder prevention and treatment policies, programs, and services.

Drug Enforcement Administration (DEA)

Visit dea.gov for information about various drugs, laws (including drug classifications), and U.S. regulations. The DEA also has a site with resources for parents, educators, and caregivers, getsmartaboutdrugs.gov.
NIDA’s Truth Poll is offered to students during National Drug and Alcohol Facts Chat Day to encourage them to think about their daily challenges related to substance use in their student and family communities. These are some questions from the most recent poll.

I really don't know how marijuana affects the brain.

- Yes: 21.0%
- No: 30.0%
- Maybe: 49.0%

I have friends who try to talk me into smoking marijuana.

- Yes: 66.0%
- No: 26.0%
- Maybe: 8.0%
There are things I wish I could tell my parents but I am afraid they will judge me.

I don't think marijuana is all that bad.

If I thought I needed drug treatment, I would know who to contact.
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