

A stylized marijuana leaf is the central graphic, rendered in various colors including green, purple, brown, and red. It is set against a background of a sunset or sunrise with a yellow sun, an orange sky, and a blue and red ground. The leaf has seven serrated leaflets on each side.

marijuana:
facts
for teens

Revised

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Letter to Teens

Did you know that marijuana use among U.S. teens has dropped dramatically since the late 1990s? So...if you were thinking everyone smokes pot, they don't. Statistics show that about 15 percent, or roughly 1 in 7 teens, report past-month marijuana use. In the last few years, however, the decline in marijuana use has stalled, and the reason may be that fewer of you consider marijuana to be a harmful drug.

BUT...that perception is not correct. In 2009, among marijuana users 12 and older, 4.3 million had a marijuana abuse or addiction problem, according to clinical diagnostic criteria. Look inside this booklet to see what else we know, because marijuana is not as harmless as you may think.

Our goal is to give you the straight facts, so you can make smart choices and be your best self—*without* drugs. And we hope you will continue the conversation and share this information with your peers, parents, teachers, and others.

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

Need Treatment?

You can find treatment programs through this Web site www.findtreatment.samhsa.gov provided by the Substance Abuse and Mental Health Services Administration (SAMHSA). Also, you can call the SAMHSA Treatment Referral hotline at 1-800-662-HELP. Treatment can help you, a friend, or someone you love get back to the person you or they once were.

Contents...

Letter to Teens

I. Some Things to Think About	3
Addiction	3
Driving	4
School	4
Psychosis/Panic	5
II. Want to Know More? Some FAQs About Marijuana	6
What is marijuana? Are there different kinds?	6
How does marijuana exert its effects?	6
How long does marijuana stay in your body?	8
Does marijuana use lead to other drugs?	10
What happens if you smoke marijuana?	10
What are the activities/behaviors most likely to be affected?	12
What does marijuana do to the brain?	12
How does smoking marijuana affect the lungs?	14
Can marijuana affect the developing fetus?	16
Does marijuana produce withdrawal symptoms when someone quits using it?	16
What if a person wants to quit using the drug?	16
Isn't marijuana sometimes used as a medicine?	18
III. Other Useful Resources	20

I. Some Things to Think About

ADDICTION:

Marijuana is addictive. Of course, not everyone who smokes marijuana will become addicted—that depends on a whole bunch of factors—including your family history (genes), the age you start using, whether you also use other drugs, family and peer relationships, success in school, etc. Repeated marijuana use can lead to addiction—which means that people have difficulty controlling their drug use and often cannot stop even though they want to, and even though it undermines many aspects of their lives. Research shows that approximately 9 percent, or about 1 in 11, of those who use marijuana at least once will become addicted. This rate increases to 16 percent, or about 1 in 6, if you start in your teens, and goes up to 25–50 percent among daily users. Moreover, among young people in drug abuse treatment, marijuana accounts for the largest percentage of admissions: 61 percent of those under age 15 and 56 percent of those 15–19.

People smoke pot 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 Web site and blog. Share them with your friends to help them separate fact from myth. This booklet also includes FAQs and additional resources for more information.

DRIVING:

Marijuana is UNSafe if you are behind the wheel. Marijuana is the most common illegal drug found in drivers who die in accidents (around 14 percent of drivers), often in combination with alcohol or other drugs. Marijuana affects a number of skills required for safe driving—alertness, concentration, coordination, and reaction time—so it’s not safe to drive high or to ride with someone who’s been smoking. Marijuana makes it hard to judge distances and react to signals and sounds on the road. And combining marijuana with drinking even a small amount of alcohol greatly increases driving danger, more than either drug alone.

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 smoke often. Someone who smokes marijuana daily may be functioning with a ‘dimmed-down’ brain most or all of the time. Compared with their peers who don’t smoke, students who smoke marijuana tend to get lower grades and are more likely to drop out of high school. Also, longtime marijuana users *themselves* report being less satisfied with their lives, experiencing 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 usually goes away as the drug’s effects wear off. Scientists do not yet know if marijuana use *causes* lasting mental illness, although it can worsen psychotic symptoms in people who already have the mental illness schizophrenia, and it can increase the risk of long-lasting psychosis in those vulnerable to the disease.



II. Want to Know More?

Some FAQs About Marijuana

Q: What is marijuana?
Are there different kinds?

A: Marijuana is a green, brown, or gray mixture of dried, shredded leaves, stems, seeds, and flowers of the hemp, or cannabis, 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.

Q: How does marijuana exert its effects?

A: 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 strength or potency and therefore its effects. The THC content of marijuana has been increasing since the 1980s.

marijuana
fact:

Most teenagers do
not use marijuana.

marijuana fact:

Marijuana is addictive. About 1 in 6 people who start using as a teen, and 25-50 percent of those who use it every day, become addicted to marijuana.

“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 Sara Bellum Blog

Q: How long does marijuana stay in your body?

A: The THC in marijuana is rapidly absorbed by fatty tissues in various organs throughout the body. In general, standard urine tests can detect traces (metabolites) of THC several days after use. In heavy users, however, THC metabolites can sometimes be detected for weeks after use stops.

Q: Does marijuana use lead to other drugs?

A: Long-term studies of drug use patterns show that very few high school students use other illegal drugs without first trying marijuana. However, many young people who use marijuana do not go on to use other drugs. Among those who do, here are some theories:

- Exposure to marijuana may affect the brain, particularly during development, which continues into the early twenties. Effects may include changes to the brain that make other drugs more appealing. Animal research supports this possibility—that early exposure to cannabis makes opiate drugs more rewarding, for example.
- Someone who is using marijuana may be in contact with other users as well as 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 of its availability (probably cigarettes and alcohol, too).

Q: What happens if you smoke marijuana?

A: 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 (more likely with stronger varieties of marijuana). Regular use of marijuana has also been associated with depression, anxiety, and an amotivational syndrome, which means a loss of drive or

ambition, even for previously rewarding activities. Marijuana also often makes users feel hungry. Its effects can be unpredictable, especially when other drugs are mixed with it.

In the short-term, marijuana can cause:

- problems with learning and memory;
- distorted perception (sights, sounds, time, touch);
- diminished motor coordination; and
- increased heart rate.

But marijuana affects each person differently according to:

- biology (e.g., his or her genes);
- marijuana's strength or potency (how much THC it has);
- the circumstances of its use and expectations of effects;
- previous experience with the drug;
- how it's taken (smoked versus ingested); and
- whether alcohol or other drugs are involved.

“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 with being a daily marijuana smoker.

Q: What are the activities/behaviors most likely to be affected?

A: **Learning:** Marijuana's effects on attention and memory make it difficult not only to learn something new, but to do complex tasks that require focus and concentration or the stringing together of a lot of information sequentially.

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

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

Q: What does marijuana do to the brain?

A: We know a lot about where marijuana acts in the brain and how it exerts its effects at specific sites called cannabinoid receptors. These are found in brain regions that influence learning and memory, appetite, coordination, and pleasure. That's why marijuana produces the effects it does. We know much less about what happens to the brain in the long run, when someone is a regular marijuana smoker.

Scientists use brain imaging techniques to study the living human brain, but we are still in the early stages of that research when it comes to marijuana. So, while differences show up in the brains of marijuana users (versus nonusers),

marijuana
fact:

Marijuana and driving do not mix. It is the most common illegal drug found in drivers who die in accidents (around 14 percent of drivers), sometimes in combination with alcohol or other drugs.

we do not 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 *marijuana-only* smokers who do not also abuse alcohol—which has its own negative effects on brain function.

Q: How does smoking marijuana affect the lungs?

A: Someone who smokes marijuana regularly may have many of the same respiratory problems that tobacco smokers do, such as daily cough, more frequent upper respiratory illnesses, and a greater risk of lung infections like pneumonia. As with tobacco smoke, marijuana smoke consists of a toxic mixture of gases and tiny particles, many of which are known to 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 tobacco use.

marijuana
fact:

Marijuana affects
the brain—altering
memory, judgment,
and motor skills.

Q: Can marijuana affect the developing fetus?

A: 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 problemsolving skills, memory, and attention. More research is needed because it is hard to say for sure what causes what: for example, pregnant women who use marijuana may also smoke cigarettes or drink alcohol, both of which can also affect fetal development.

Q: Does marijuana produce withdrawal symptoms when someone quits using it?

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

Q: What if a person wants to quit using the drug?

A: Researchers are testing different ways to help marijuana users abstain from drug use, including developing 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 individuals 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 opportunities to try drugs. Certainly, you can choose not to try drugs if offered—but this can be a challenge. An alternative approach would be to see if your friend will stop using marijuana—for your benefit and his/hers.

—from NIDA's 2009 CHAT DAY

Q: Isn't marijuana sometimes used as a medicine?

A: Several states have passed medical marijuana laws, but marijuana has not been approved by the Food and Drug Administration (FDA) to treat any diseases. Even so, we know that the marijuana plant contains ingredients that could have important medical uses. Currently, two pill versions of THC, marijuana's psychoactive ingredient, have been approved to treat nausea in cancer chemotherapy patients and to stimulate appetite in some patients with AIDS. Also, a new product called Sativex is available in the United Kingdom and Canada as a mouth spray. It is a chemically pure mixture of plant-derived THC and cannabidiol (another chemical found in the marijuana plant) approved to relieve cancer-associated pain and spasticity and nerve pain in multiple sclerosis. However, it's important to remember that because marijuana is usually smoked and has ingredients that can vary from plant to plant, the associated health risks may outweigh its value as a treatment. Scientists continue to investigate the medicinal properties of THC and other manmade or plant-derived cannabinoids to better evaluate and harness their potential to alleviate suffering, while avoiding the harmful effects of smoking marijuana, including addiction.

marijuana fact:

Among youth receiving substance abuse treatment, marijuana accounts for the largest percentage of admissions: 61 percent of those under 15, and 56 percent of those 15-19.

III. Other Useful Resources

Here are some helpful places to go for more information:

The NIDA Web site 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 Sara Bellum blog for teens, where you can even 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.

To learn more about mental health disorders like depression or schizophrenia, visit the National Institute of Mental Health 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.

The National Institute on Alcohol Abuse and Alcoholism Web site www.niaaa.nih.gov contains the latest research, news, and other resources related to alcohol. They even have a site especially for young teens called "the cool spot" <http://www.thecoolspot.gov/>, with quizzes and other interactive screens that give you information on alcohol and resisting peer pressure.