

Marijuana

What Is It?

Marijuana is a mixture of the dried and shredded leaves, stems, seeds, and flowers of the hemp plant. The mixture can be green, brown, or gray. Hemp's scientific name is *Cannabis sativa*.



A bunch of leaves seems harmless, right? But think again. Marijuana has a chemical in it called tetrahydrocannabinol. Better known as THC. A lot of other chemicals are found in marijuana too—about 400 of them, some of which can cause lung cancer. But THC is the main active ingredient.

What Are the Common Street Names?

There are more than 200 slang terms for marijuana from city to city and from neighborhood to neighborhood. Some common names are: pot, grass, herb, weed, Mary Jane, reefer, skunk, boom, gangster, kif, chronic, and ganja.

How Is It Used?

Marijuana is used in many ways. Some users brew it as tea or mix it with food. Others smoke blunts—cigars hollowed out and filled with the drug. And sometimes marijuana is smoked through a water pipe called a bong. The most common method is smoking loose marijuana rolled into a cigarette called a joint or nail.

How Many Teens Use Marijuana?

Ever heard that lame line "everybody's doing it?" Tell that person to check the facts. As part of a 2002 NIDA-funded study, researchers asked teens if they had used marijuana or hashish (another form of marijuana) in the past month. Of all the 8th graders surveyed, only 8.3% said yes; only 17.8% of 10th graders had used the drug in the past month; and just 21.5% of 12th graders.

What Are the Common Effects?

Imagine this: You're in a ball game, playing out in left field. An easy fly ball comes your way, and you're psyched. When that ball lands in your glove your team will win, and you'll be a hero. But, you're a little off. The ball grazes your glove and hits dirt. So much for your dreams of glory.

Such loss of coordination can be caused by smoking marijuana. And that's just one of the many negative side effects. Under the influence of marijuana, you could forget your best friend's phone number, watch your grade point average drop like a stone, or get into a car accident. Even worse, high doses of marijuana use can cause anxiety and panic attacks.

Before we look at the damage marijuana can do, let's back up for a second and discuss a tricky truth. For some people, smoking marijuana makes them feel good. Within minutes of inhaling, a user begins to feel "high," or filled with pleasant sensations. A chemical in marijuana, THC, triggers brain cells to release the chemical dopamine. Dopamine creates good feelings—for a short time.

Addiction

Here's the thing: Once dopamine starts flowing, a user feels the urge to smoke marijuana again, and then again, and then again. Repeated use could lead to addiction, and addiction is a brain disease.

THC Attaches to Specific Receptors in the Brain

THC is up to no good in the brain. THC finds brain cells, or neurons, with specific kinds of receptors called cannabinoid receptors. Then, it binds to these receptors.

When it attaches to a neuron, THC interferes with normal communication between neurons. Think of it as a disruption in the phone service, caused perhaps by too many users all at once. Let's say Neuron #1 needs to tell Neuron #2 to create a new memory. If THC is in the mix, this communication is likely to fail.

Certain parts of the brain have high concentrations of cannabinoid receptors. These areas are: the hippocampus, the cerebellum, the basal ganglia, and the cerebral cortex.

THC Creates Learning and Memory Problems

The hippocampus is a part of the brain with a funny name and a big job. It's in charge of certain types of learning and memory.

Disrupting the normal functioning of the hippocampus can lead to trouble studying and learning and problems recalling recent events. The difficulty can be a lot more serious than "Did I take out the trash this morning?"

Interference with the hippocampus may also lead to lasting memory loss. Studies in rats show that taking in a lot of THC over a long period of time can damage neurons in the hippocampus. Chances are, if it happens to rats, it's happening to people who smoke marijuana.

Smoking Marijuana Can Make Driving Dangerous

The cerebellum is the section of our brain that does most of the work on balance and coordination. When THC finds its way into the cerebellum, it makes scoring a goal in soccer or hitting a homerun pretty tough.

THC also does a number on the basal ganglia, another part of the brain that's involved in movement control.

These THC effects can spell disaster on the highway. Research shows that drivers on marijuana have slow reaction times, impaired judgment, and problems responding to signals and sounds on the road. In one study of 150 reckless drivers, 33 tested positive for marijuana.

Smoking Marijuana May Lead to Lung Cancer

The list of negative effects goes on and on. Smoking marijuana may increase the risk of heart attack. Smoking marijuana may cause lung cancer because it has some of the same cancer-causing substances as tobacco. Plus, marijuana smokers tend to inhale more deeply and hold their breath longer than cigarette smokers do. So more smoke enters the lungs. Puff for puff, smoking marijuana may increase the risk of cancer even more than smoking cigarettes does.

What About Medical Marijuana?

THC, the main active ingredient in marijuana, produces effects that potentially can be useful for treating a variety of medical conditions. It is the main ingredient in a pill that is currently used to treat nausea in cancer chemotherapy patients and to stimulate appetite in patients with wasting due to AIDS. Scientists are continuing to investigate other potential medical uses for cannabinoids.

However, smoking marijuana is difficult to justify medically because the amount of THC in marijuana is not always consistent. It would be difficult—if not impossible—to come up with a safe and effective use of the drug because you could never be sure how much THC you were getting. Moreover, the negative effects of marijuana smoke on the lungs will offset the helpfulness of smoked marijuana for some patients.

Finally, little is known about the many chemicals besides THC that are in marijuana, or their possible negative impact on patients with medical conditions.

*See References