

Is marijuana bad for you?

As the legalization of pot marches on, the health consequences of smoking it are as hotly contested as ever.

How does marijuana get users high?

When marijuana is smoked or eaten, a chemical called tetrahydrocannabinol, or THC, is absorbed into the bloodstream, activating proteins in the user's brain and spinal cord. This produces short-term psychoactive effects, including euphoria, a heightened state of awareness, and a sharp appetite. It's a high many Americans enjoy: One in three admits to having tried marijuana, and 5 million use it almost every day. Already allowed for medical use in 18 states, marijuana has just been legalized for recreational use in Colorado and Washington state. But even as pot moves toward mainstream acceptance, questions persist about its long-term effects on the mind and body. "We know surprisingly little about marijuana, given its widespread use," said Jonathan P. Caulkins, a policy expert at Carnegie Mellon University.



A controversial therapy

Hasn't pot always been considered harmful?

Not at all. Marijuana, the dried form of the plant *Cannabis sativa*, was used as an herbal remedy for centuries in China, the Middle East, and Asia. William O'Shaughnessy, a physician for the East India Tea Company, brought it west in the 1830s as a treatment for rheumatism, tetanus, and rabies. It was commonly prescribed as a pain reliever in the U.S. until the 1930s, when its growing popularity caused such concern that the newly founded Federal Bureau of Narcotics reclassified it as a narcotic. The bureau soon launched a decidedly unscientific campaign claiming that marijuana use provoked insanity, homicidal tendencies, and uncontrollable lust. The marijuana user, the bureau asserted, "becomes a fiend with savage or 'caveman' tendencies. His sex desires are aroused, and some of the most horrible crimes result."

Was there any evidence for such claims?

None; in fact, the American Medical Association argued against marijuana prohibition in the 1930s, citing its therapeutic potential. But the bureau made its case that marijuana was "dangerous for the mind and the body," and the federal government outlawed its use in 1937. It wasn't until the 1970s that a campaign began to restore marijuana's therapeutic reputation, and in 1996 California became the first state to legalize cannabis for medicinal purposes. Psychiatrist Tod Mikuriya, a founding father in the medical marijuana movement, claimed that cannabis has none of the adverse side effects of opiates. "In fact," he said, "it really enhances both quality of life and rehabilitation."

Does research bear that out?

"We don't have as good data as we have for alcohol, but the evidence is already clear," said Susan Weiss, policy chief for the National Institute on Drug Abuse. "Marijuana is not good for you." Frequent, prolonged marijuana use has been linked to depression, psy-

chosis, anxiety, and other mental disorders, especially among teenagers. A decades-long study in New Zealand found that adolescents who used pot at least four times a week lost an average of 8 IQ points between the ages of 13 and 38. Studies suggest that about 9 percent of all users become dependent on marijuana, and that pot smokers have far higher rates of workplace injuries and school absences than non-users. One study of 46,000 Swedish soldiers found that even infrequent pot smokers were more than twice as likely to develop schizophrenia as

non-smokers; regular users were six times as likely. Fred Gardner of the California Cannabis Medical Research Group says the National Institute on Drug Abuse "looks for the negative stuff on purpose and disregards anything positive about cannabis." And no study has proved a causal link between marijuana use and neurological disease.

What positive effects can it have?

An Institute of Medicine study in 1999 found that marijuana provided "modestly effective" relief for nerve pain, stimulated appetite for people with AIDS, and helped chemotherapy patients control nausea and vomiting. But there's no evidence that marijuana works better than other therapies, and anti-drug advocates argue that the overwhelming majority of medical users aren't really sick. In Colorado, just 3 percent of the state's 104,000 medical marijuana users are cancer sufferers, and 94 percent say they use it to relieve pain, which is notoriously hard to verify. "Most medical marijuana recipients are drug abusers who are either faking or exaggerating their problems," said addiction psychiatrist Ed Gogek.

Why is marijuana's impact so unsettled?

Because ever since the battle over marijuana prohibition began in the 1930s, both sides have argued their cases more with politics than with solid science. Particularly in the early years, anti-drug crusaders demonized pot as a narcotic and wildly overstated its effects; since then its advocates have cavalierly dismissed any suggestion of negative side effects as pro-establishment ideology. Part of the

problem is that published research into marijuana's physiological effects is woefully limited. A 2009 review by the AMA found fewer than 20 legitimate clinical trials of marijuana use in the U.S., involving a total of just 300 people. That's because the Drug Enforcement Administration routinely refuses to grant universities and pharmaceutical companies permission to research marijuana use. The new laws in Colorado and Washington might allow researchers to gather substantive proof of marijuana's harms and benefits. "It's an empirical question," said Rosalie Liccardo Pacula, director of the Drug Policy Research Center at the RAND Corp., "and we'll finally have data to assess it."

Not your daddy's reefer

Those who smoked weed in college a generation ago might find a toke or two of today's product enough to knock them all the way back to the Summer of Love. Whereas traditional marijuana contained around 1 percent of the active ingredient THC, experts say today's weed contains up to 10 percent. "The emergence of bioengineered crops and novel, medicinal marijuana strains means that marijuana is no longer what it used to be in the 1970s and early 1980s," said Dr. Delphine Psychoyos, a researcher at Texas A&M University. But others counter that memories have become foggy, and that traditional pot was a lot stronger than people now say it was. "One percent is not smokable. That's really industrial hemp," said marijuana reform advocate Keith Stroup. "All you'll get from that is a headache."