

Legalize it? Medical evidence on marijuana blows both ways

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Sparked anew by Gov. Arnold Schwarzenegger's call for the state to study the legalization of marijuana, both sides in the smoldering pot debate point to research to bolster their positions.

Such recitation of conflicting [marijuana](#) studies can be manipulated and selected buffet-style to serve whatever political and health agenda is being touted.

Even governmental findings can be contradictory. In 1999, for instance, the Office of National Drug Control Policy asked the Institute of Medicine to review evidence. The institute found that, "except for the harms associated with smoking, the adverse effects of marijuana use are within the range of effects tolerated for other medications."

Yet in 2006, the [Food and Drug Administration](#) ruled that marijuana has no health benefits and has known and proven harms. It is classified a Schedule 1 drug -- the highest risk of addiction -- in the Controlled Substances Act.

Wading through the medical literature, though, makes those conclusions less cut and dried.

"When I was a resident in Kaiser in San Francisco in 1978, I gave a lecture to physicians on marijuana, and I remember my conclusion at that time was that you can find in the literature whatever you were looking for," says Dr. Donald Abrams, a University of California, San

Francisco, oncologist and leading medical marijuana researcher. " 'Marijuana is good for asthma.' 'Marijuana's bad for asthma.' 'Marijuana causes schizophrenia.' 'Marijuana (decreases) schizophrenia.' And, you know, the evidence is still like that."

There are many factors, of course. As noted by UCLA pulmonologist Dr. Donald Tashkin, who has studied marijuana's effects on the lungs for three decades, "That's just the nature of medical science. You have to deal with variability. The population studied may be different or the methods used to study may differ."

Yet when the arguments for legalization of marijuana, both for medicinal and recreational use, are put forth, solid medical science often gets clouded in an ideological haze.

"Although we like to say we separate politics from science, with medical marijuana, that's really difficult," Abrams says. "It depends on who does the study, where it's published and what their agenda is."

Bearing in mind those caveats, here is a look at the research on marijuana's effect in areas critical to health.

Lungs

UCLA's Tashkin studied heavy marijuana smokers to determine whether the use led to increased risk of lung cancer and chronic obstructive pulmonary disease, or COPD. He had hypothesized that there would be a definitive link between cancer and marijuana smoking, yet the results proved otherwise.

"What we found instead was no association and even a suggestion of some protective effect," says Tashkin, whose research was the largest case-control study ever conducted. The study was funded by the National

Institutes of Health.

Tobacco smokers in the study had as much as a 21-fold increase in lung cancer risk. Cigarette smokers, too, developed COPD more often in the study, and researchers found that marijuana did not impair lung function.

Tashkin, supported by other research, concluded that the active ingredient tetrahydrocannabinol, or THC, has an "anti-tumoral effect" in which "cells die earlier before they age enough to develop mutations that might lead to lung cancer."

However, the smoke from marijuana did swell the airways and lead to a greater risk of chronic bronchitis.

"Early on, when our research appeared as if there would be a negative impact on lung health, I was opposed to legalization because I thought it would lead to increased use and that would lead to increased health effects," Tashkin says.

"But at this point, I'd be in favor of legalization. I wouldn't encourage anybody to smoke any substances, because of the potential for harm. But I don't think it should be stigmatized as an illegal substance.

"Tobacco smoking causes far more harm. And in terms of an intoxicant, alcohol causes far more harm."

Cognitive function

A 2006 study in the journal *Neurology* found that speed of thinking, attention and verbal fluency were affected as much as 70 percent by long-term heavy use (four or more joints per week).

But a 2003 review of literature in the Journal of the International Neuropsychological Society found that marijuana smoking had a "small effect" on memory in longtime users.

However, users had no lasting effects in reaction time, attention or verbal function.

"Surprisingly, we saw very little evidence of deleterious effects," Dr. Igor Grant, researcher at the University of California, San Diego, School of Medicine, said in a statement.

Other studies: A 2002 study in the Journal of the American Medical Association found that heavy users did worse on recall memory tests. A 2006 study in Greece showed users had slower mental-processing speed than the control group.

Then again, a 2007 study at the University of Lausanne in Switzerland, published in Archives of Pediatrics & Adolescent Medicine, found that students who smoked marijuana had better grades than those who used only tobacco or those who did not smoke any substance.

In terms of brain development, a 2000 study in the Journal of Addictive Diseases found changes in brain structure in those who started using marijuana before age 17 but not in those who started at an older age.

A 2009 Children's Hospital of Philadelphia study used brain imaging to show that heavy adolescent users are more likely to have disrupted brain development in regions involving memory, attention, decision making and language.

But a 2008 Ohio State University study found that marijuana can reduce brain inflammation and perhaps reduce memory impairment that could delay Alzheimer's disease.

Psychosis

Yes, there is an increased risk in psychotic behavior and long-term risk of mental illness from marijuana use, according to a 2007 review of literature commissioned by Great Britain's Department of Health and published in the Lancet.

But the risk is small, because the risk of developing psychosis in the general population is 3 percent over a lifetime and rises to 5 percent for marijuana users, lead researcher Stanley Zammit told the Los Angeles Times. "So 95 percent of the people are not going to get psychotic, even if they smoke on a daily basis," he told the paper.

In 2005, New Zealand researchers studied a group of people with a gene variant the researchers believe predisposes that group to developing psychosis. Those in the group who smoked marijuana as teens had a tenfold increase in risk of psychosis than those who abstained.

Depression

A study published in 2001 in the American Journal of Psychiatry followed nearly 2,000 adults over 15 years. It found that marijuana users who had no symptoms of depression at the start were four times more likely than non-users of developing symptoms during that time frame.

In 2008, the U.S. Office of National Drug Control Policy stated that early marijuana use could increase the likelihood of mental illness by as much as 40 percent later in life.

However, researchers at McGill University in Montreal in 2007 reported in the Journal of Neuroscience that THC in low doses actually serves as an antidepressant similar to Prozac, producing serotonin. At higher

doses, however, they found it could lead not only to depression but also to psychotic episodes.

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