SAHMmatters

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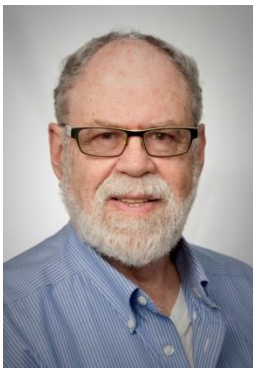
Editor's Column



Henry Berman, MD

I often quote Bob Dylan to parents to help them understand their teens, who are "beyond their command." One parent asked me if I was a "child of the 60s." I answered, "No, I am an adult of the 60s." Marijuana use in the U.S. was not considered as much of a problem at that time. In 1965, there were only 18,000 arrests for marijuana use, despite its frequent use. A 1967-68 study of San Francisco residents aged 18 to 24 found that about one-third of the women and one-half of the men had tried marijuana. [Source of citations available on request.]

It was clear to me at the time that smoking marijuana should not be a crime. It was clearly safer than alcohol:

- In a pooled analysis the highest risk of crash involvement was for drivers with high alcohol concentrations (above .12 BAC)—they had a crash risk 20–200 times that of sober drivers. Drivers with BACs between .08 and .12 were estimated to be 5–30 times more likely to crash than sober drivers. Drivers positive for THC were estimated to be at elevated risk (1–3 times that of sober drivers), similar to drivers with BAC levels between .01 to < 0.05.

- Moderation analyses demonstrated that, in couples in which both spouses used marijuana frequently, the least frequent IPV perpetration was reported.

And it was safer for the user also. Whereas heavy use of alcohol can lead to an increase in the frequency of cirrhosis, dementia, cardiovascular disease, depression, seizures, and other problems, it seemed that the only poor outcome from frequent marijuana use was breathing

problems—but even that was at a much lower rate than cigarettes, another legal substance.

Our knowledge, and the behaviors of users, are much different now than during the 1967 Summer of Love, in San Francisco:

- We knew nothing about the effects on the developing adolescent brain (we didn't even know that the teenage brain was still developing).
- The national average for THC content in 1978 was 1.37% as compared to 8.49% in 2008.
- "Edibles" were unknown (except for readers of the Alice B. Toklas Cookbook). Whereas consumers commonly assume that a candy bar constitutes a single serving, some of these products contain four or more times the level of tetrahydrocannabinol (THC) that is considered to be a safe dose.
- In addition, eaten cannabis gets metabolized by the liver-- delta-9 THC becomes 11-hydroxy-THC, which passes the blood-brain barrier more rapidly and has more of a psychedelic effect than standard THC. It is considered twice as strong and lasts twice as long.
- "Dabbing" and "Vaping" had not yet been created. A "dab" can be 80 percent or more THC. And "vaping" can be used by teens who want to inhale cannabis in school bathrooms without concern that their teachers would smell smoke.

For several decades I was a proponent of legalizing marijuana. For one thing, police had developed approaches to discovering marijuana being carried by teens, primarily to increase the number of arrests, to meet a quota. This chart shows the changes in the frequency of arrests for the possession of marijuana over the past 50 years:

Time period	Average number of arrests for marijuana possession
1965	18,000
1969	119,000
1975 through 1995	400,000
2001-2010	820,000

The jump from 119,000 arrests in 1969 to an average of 400,000 in the next three decades can be ascribed primarily to the "war on drugs" proposed by Richard Nixon. The jump in the

first decade of this century is likely due to various changes in policing policies and/or strategies. New York City saw a dramatic change in their arrest record for marijuana possession:

Broken Windows Theory
The term "Broken Windows" comes from the metaphor used to describe this concept: "If a window is broken and left unrepaired, people walking by will conclude that no one cares and no one is in charge." This theory is based on the concept that the little things matter, and was adopted by a number of cities. There is no evidence that dangerous crimes decreased by reducing "broken windows." What we do know, however, is that after it was introduced in New York in 1991, arrests for marijuana went from fewer than 800 in 1991 to more than 59,000 in 2010.

Another reason I favored making the use of marijuana legal is it became clear that racial bias was the driver for the increase in arrests. In June of 2013, the ACLU reported that despite roughly equal usage rates, blacks were 3.73 times more likely than whites to be arrested for marijuana use. The ratio varied from state to state. In the state with the highest ratio, Iowa, blacks were 8.34 times more likely to be arrested. D.C. had the second highest; in the District, blacks were 8.05 times more likely to be arrested. In New York City, the rate of arrests of blacks was 7 times that of whites.

[I sent a draft of this column to Leslie Walker, MD, who has been very active in issues around marijuana. Sadly, she had this addition: "The legalization of marijuana has not changed the ratio of increased arrests for African American men--they still constitute ¾ of the marijuana arrests."]

Along came "medical marijuana."

In 1996, California legalized medical cannabis. That seemed to be a small step forward to my hope that marijuana would become legal for all indications. [Now 28 states have approved medical marijuana—14 of those since 2010, and 7 of the 14 in the past two years.]

My impression at the time was that marijuana was effective for relieving extreme pain caused by cancer, and helped reduce nausea in patients on chemotherapy. It turned out that I was sort of right. In 2015, an article in JAMA found that the use of marijuana for chronic pain, neuropathic pain, and spasticity due to multiple sclerosis is supported by high-quality evidence. An article in *Neurology* the previous year added urinary dysfunction to that list.

As for patients being treated with chemotherapy, studies have shown it is effective in reducing nausea but, to date, not as effective as other drugs.

So I was content with my minimal level of knowledge—mostly True Facts—until four years ago, when a 15-year-old boy I had been seeing for a year or so because he was not attending school, due to extreme anxiety, showed up for a visit with a smile on his face. He said that he and his therapist had come up with a plan that would enable him to attend school. I was impressed that his therapist had been successful where I and my social worker colleague had not. Until he told me the plan. He said that he smoked marijuana to decrease his anxiety so if I gave him a "green card" (that entitled him to "medical marijuana"), he would be able to attend school. After I answered with an emphatic "No," I realized that I needed to learn more about the "medical marijuana" laws.

The State of Washington had passed a law several years earlier that stated: "There is medical evidence that some patients with terminal or debilitating medical conditions may, under their health care professional's care, benefit from the medical use of marijuana.

- Nausea, vomiting, and cachexia associated with cancer, HIV-positive status, AIDS, hepatitis C, anorexia, and their treatments;
- Severe muscle spasms associated with multiple sclerosis, epilepsy, and other seizure and spasticity disorders;
- Acute or chronic glaucoma;
- Crohn's disease; and
- Some forms of intractable pain.

But just prior to this list, the law states, "*Some* of the conditions for which marijuana appears to be beneficial include, *but are not limited* to:"

You can drive a Mack Truck through that language—and a lot of physicians do. After all, if they do not give a patient a green card, another doctor will (true) and that patient will then transfer all of their care to that physician (also true). And if you believe it may be beneficial (perhaps my patient would indeed attend school if high), it is legal to authorize it (also true).

There are a number of approaches a legislature can take toward cannabis. Each has its pluses and minuses (including *many more* than are shown in this chart)

Approach	Some advantages	Some disadvantages	Some thoughts
All cannabis is illegal	Clear Consistent with Federal law. Aligns with viewpoint of 44% of people (63% in 2000) Likely best way to minimize use by teens.	Behaviors are trending away from this solution: **2013**: 7% use, 38% have tried **2016**: 13% use, 43% have tried Prison sentences that affect lives permanently. Racial discrimination.	Could keep it illegal but "decriminalize" possession to the equivalent of a parking ticket. But if parking tickets are not paid, there can be dire consequences—loss of license, large fines, etc.
Only "medical marijuana" would be legal	Huge amount of support—88% Will benefit some people	Officially against Federal law, but not likely to be enforced. Not clear what conditions it is effective for—evidence to date supports only a few.	**1.Should it be legal for teens?** 2.May be effective for some patients because of the placebo effect, or because there are many treatments that are effective for a small number of people, but not enough to be statistically significant.
Marijuana should be legal with some restrictions	Approved by 56% of people	Against Federal law (as are the next two models, in spades)	E.g., access to marijuana through home cultivation, dispensaries or some other system; limited number of plants each person can have; edibles must be home made.

Smoking marijuana should be legal for all adults	Understandable No discrimination against minority people No jail sentences Can have standards to ensure safety	It leaves the issue of edibles in the air. If smoking it is OK, why not eating it? How can one puff be legal when one bite of the same substance is a crime?	The more lightly marijuana is regulated, the more marijuana is used by adults. The more it is used by adults, **the more it will be used by teens.**
Marijuana approved, including edibles	Clear	**Risk to young children** and displayed to attract them. Stronger than smoking.	Edibles are marketed: https://www.speedweed.com/product-category/edibles/

When I decided on this for a topic, I had thought that the research and structuring I would be doing might help me decide the best solution to the regulation of marijuana. But the more I read, the more difficult it became for me to come up with a simple answer. I'll start with where I was 45 years ago: As long as marijuana is illegal, crime will continue, people of color will be arrested, and our prisons will stay full. But given how much stronger marijuana is now than it was at that time, we need governmental oversight.

Customers need to be confident that what they are buying *to smoke* has been manufactured properly. They should also know its strength. Just as we have a "standard drink" calculation that shows the percent of alcohol in a drink (about 6% for beer, 12% for wine, and 40% for spirits), a package of marijuana would show the percent of THC. It could come in different strengths, but would have to be labeled as such, and there would be a maximum—perhaps 10%. Advertising should be controlled much more carefully than it is with alcohol (see article by Jernigan, below).

The regulation of edibles is more complex. A child being taken to the emergency room should be a "never event." Just because edibles are legal does not mean they need to come in sizes, shapes, and colors that attract children. "Olive drab" is the basic U.S. Army dark olive green that has been used by armed forces throughout the world. "Plain brown wrapper" was originally used to allow postal delivery of sexually explicit periodicals. Edibles could be sold in one of those two colors, in a rectangular shape, unscented.

And it is critical that we develop a method to teach clinicians, parents, teens, and the media about the risks to the teen brain—funded by the companies that sell marijuana.

I would love to receive your comments (henry.berman@seattlechildrens.org), including any work you or your colleagues have done with legislators who are considering creating laws on this issue. We know that the last thing legislators are considering as they shape a proposal on legalizing marijuana is its effects on children and teens.

There are a number of articles, comments, and position papers around this issue. One must-read is by long-time SAHM member Alain Joffe, MD, MPH, who recently retired from his position at Johns Hopkins. He just published an editorial, *Understanding the Full Effect of the Changing Legal Status of Marijuana on Youth. Getting It Right*. *JAMA Pediatrics*, February 2017.

I asked Alain for his thoughts on the issue. "My sense is that we will need to take lessons from what we have learned from tobacco and alcohol - higher prices drive down teen use. I think curbs on advertising are important but recent analyses shows that the alcohol industry has managed to bypass their voluntary restrictions. And I do think we need to figure out a system that deters people from selling to under age youth but doesn't put them in jail for twenty years." Alain recommend an article on this topic by David Jernigan: *Alcohol marketing and youth alcohol consumption: a systematic review of longitudinal studies published since 2008*. David Jernigan et al. *Addiction*, (2016) 112 (Suppl. 1), 7–20.

I also recommend that you read AAP's Committee on Substance Abuse and Committee on Adolescence policy statement: *The Impact of Marijuana Policies on Youth: Clinical, Research, and Legal Update*. (2015) The lead authors are Seth D. Ammerman, MD, FAAP, FSAHM; Sheryl A. Ryan, MD, FAAP, FSAHM; and William P. Adelman, MD, FAAP (SAHM member).

[Just as we were going to press, the March issue of *Pediatrics* was released, with an article by Ammerman and Ryan, *Counseling Parents and Teens About Marijuana Use in the Era of Legalization of Marijuana*.]

And, from the many other publications, I recommend an article the NEJM published on edibles, an issue that particularly concerns me. [Several months ago, *The New York Times* published a Letter to the Editor that I wrote that included my concerns about that.] *Half-Baked — The Retail Promotion of Marijuana Edibles*. Robert J. MacCoun, Ph.D., and Michelle M. Mello, J.D., Ph.D. *NEJM* March 12, 2015.

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