



<u>Matt Springer, PhD</u>, is a

Professor of Medicine at the University of California, San Francisco, who studies the effects of secondhand marijuana smoke. He spoke with us about the implications of the <u>recent</u> <u>announcement</u> by the federal Drug Enforcement Administration that it will lift restrictions on the growing of marijuana to supply

researchers.

How will the DEA's announcement affect your research?

Not as much as you might think. I still will not be able to study what I'd like to. I'd like to study real-world cannabis used by real people. UCSF used real-world cigarettes, not research-reference cigarettes, for tobacco studies in the past. But with marijuana, the only marijuana I can get is research-reference grade. Now with the DEA lifting restrictions, other places will be able to grow research-grade marijuana, which is still not the same as being able to obtain real-world marijuana. I know that research-grade marijuana is not the same as what is on the street, although I suspect that the smoke that results from burning street-grade and research-grade marijuana smoke is to tobacco smoke. So I feel that that results obtained with smoke from research-grade marijuana are a legitimate representation of smoke from marijuana in general...but we have not yet officially shown this. I think the DEA lifting

restrictions gets me in the right direction—I'll be able to get more product—but not where I want to be: more real-world product.

How does research-grade marijuana differ from marijuana that people normally smoke?

The marijuana that comes from dispensaries (called boutique or high quality-

product) is good material: mostly buds—which are composed of bracts, or tiny leaves, and immature flowers—and not the lower leaves; it's fresh and sticky. The research-grade marijuana I've used for my work, which comes from the National Institute on Drug Abuse, is more leaf, less bud, and they have reduced its moisture content because higher moisture content increases potential degradation by plant microbes during shipping and handling. This would affect the temperature at which it would burn. So there are differences.

That being said, I think that the material in the leaves and buds will be very similar. You burn any of this stuff and you would expect the products of combustion to be very similar. We are studying an effect of smoke inhalation that occurs even when THC [the psychoactive compound in marijuana that produces a "high"] is absent; it's the cardiovascular effects of inhaling smoke that we are studying, rather than the psychoactive effects caused by THC. The differences may be more theoretical. For example, we have to humidify the research-grade marijuana that has a lower moisture level. And marijuana burns differently at different temperatures when it's dry or wet. So buds vs. leaves could be different in theory, though I think it's unlikely.

From a public health perspective, what should we be studying about marijuana?

We don't know the typical ambient level of marijuana smoke in the air; we do know with tobacco. I don't think this experiment has been done with marijuana. This is very important. The concentrations of smoke in our studies were similar to the ambient tobacco smoke that used to be common in restaurants. But we don't know what people are exposed to with regard to marijuana. Is it comparable to what is found with tobacco? You would have to go to rock concerts and marijuana parties to find that out.

What's the most important advice you can give to readers based on the research you've done on marijuana so far?

Avoid any smoke. When we first reported our results [on secondhand marijuana smoke] in 2014 at the American Heart Association conference, the sound bite was "smoke is smoke." Our later results showed <u>the same amount of marijuana smoke had a longer-lasting effect</u> than tobacco smoke. Inhaling smoke intentionally is not natural. If you're at a barbecue, if smoke blows towards you, you move out of the way. Even if the chemical composition of smoke from different sources varies in ways that could influence certain details—like the duration of a physiological response—it's best just to avoid it.

This opinion does not necessarily reflect the views of the UC Berkeley School of Public Health or of the Editorial Board at BerkeleyWellness.com.

Also see Marijuana: Hazy Health Risks.

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