

Largest study to date on delta-8-THC finds users say it's delta-9's 'nicer younger sibling'

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It's everywhere from gas stations to grocery stores and trendy boutique shops, all advertising the availability of "delta-8-THC." It's a hemp-derived cousin of delta-9-tetrahydrocannabinol (THC)—more commonly known as cannabis—the active ingredient in the cannabis plant that provides the "high" people feel after using it.

And it's the subject of a lot of debate and conversation in state legislatures, among public health practitioners and especially consumers, many of whom have turned to delta-8-THC to treat a broad range of health and medical conditions.

Although it didn't specifically address delta-8-THC, the 2018 U.S. Farm Bill effectively legalized it through a loophole that allowed the sale of hemp-derived delta-8-THC products in areas where recreational use of [cannabis](#) was prohibited, as well as where medicinal marijuana required medical authorization. By late 2020, delta-8-THC had exploded in popularity.

Despite its rapidly increasing availability, there is still a lot to learn about delta-8-THC's properties and effects.

Now, through a unique collaboration, researchers from the University at Buffalo and the University of Michigan are shedding important new light on this compound. They've partnered with a Buffalo-based manufacturer of cannabinoid (CBD) products in an effort to learn more about the benefits and potential drawbacks of delta-8-THC, and better inform lawmakers, public health officials, consumers and others.

The research team just published two papers based on their survey of more than 500 participants' experiences with delta-8-THC and how it compared to cannabis. The words of one user best describe the overarching views shared by survey participants: That delta-8-THC is like delta-9's "nicer younger sibling" because it provides all the benefits with fewer adverse reactions.

Largest delta-8-THC study to date

It's the largest study to date on users' experiences with delta-8. The findings have been published over two papers, one that appears in

Cannabis and Cannabinoid Research, the top peer-reviewed journal in the field, and another, just-published paper in the open access *Journal of Cannabis Research*.

"Because this is one of the first studies of its kind on delta-8-THC and so many states have changed their legislation, we wanted to really explore what people felt as they were using it compared to delta-9-THC. We found that people who are utilizing delta-8-THC feel fewer negative side effects, and they are using it in modalities that are safer, like vaping or edibles or using topically," said Jessica Kruger, Ph.D., a clinical assistant professor of community health and health behavior in UB's School of Public Health and Health Professions.

Kruger co-authored both papers with Daniel J. Kruger, Ph.D., a research investigator in the Population Studies Center at the University of Michigan who also has a faculty affiliation at UB.

Research on delta-8-THC is scarce, and the Krugers' work comes as more states are legalizing cannabis for recreational and [medicinal use](#), while prohibiting delta-8-THC. Of the 14 states that have banned delta-8-THC, six allow recreational use of cannabis, 10 allow medical use and three have decriminalized recreational use.

"It's paradoxical that different states and municipalities are opening up to delta-9, it's becoming more available and increasingly legalized, and yet they're putting the brakes on delta-8, even though it seems to have a better profile in terms of its effects," said Daniel Kruger.

"It's almost like the opposite of what you would do if you were informed of the evidence."

Delta-9 tetrahydrocannabinol is more potent than delta-8 and accounts for most of the THC that occurs naturally in the cannabis plant, which

makes it easy to extract, explaining why it's more commonly smoked. Delta-8-THC, however, is about half as potent. It's also produced in far less quantity and thus has to be processed from a concentrate. That's why most people consume it in edibles such as gummies or brownies, or by vaping.

Surveying delta-8 users

The Krugers partnered with Buffalo-based Bison Botanics, which used its social media channels to put out a call to delta-8-THC consumers to participate in a research survey the Krugers developed. Respondents were asked to compare their experiences with delta-8-THC vs. delta-9.

"The Krugers, and partnerships like this, are ahead of the curve. This type of research just isn't happening at the federal level because it's classified as a Schedule 1 controlled substance," said Cory Muscato, regulatory liaison for Bison Botanics.

In all, 521 people from 38 states—29% from New York—participated in the survey.

Here's what they found:

- About two-thirds said they consume delta-8-THC through edibles such as gummies.
- Experiences with delta-8 were characterized predominantly by relaxation, pain relief and euphoria, with most participants saying they could perform their normal daily activities without experiencing the adverse side effects associated with cannabis use, such as paranoia, anxiety or the munchies.
- 51% reported using delta-8-THC to treat a range of health and medical conditions, primarily anxiety or panic attacks, stress, depression or bipolar disorder and chronic pain.

- 78% said they have not told their primary care provider that they use delta-8 because they lacked confidence in their physician's ability to integrate medical cannabis into their treatment.
- On average, participants' experiences of paranoia and anxiety while using delta-8-THC were between "not at all" and "a little."
- Participants also showed little knowledge on effective doses of delta-8 and said most of what they did know about it came from the internet or their own experiences.

Delta-8 product users were more than enthusiastic to share their experiences, said Justin Schultz, Bison Botanics' founder and president. "A lot of customers that use delta-8 are so happy with its therapeutic effects, and they're worried it might be taken away. They want to do anything they can to help prevent that," Schultz said. "We're confident the state is taking this information seriously and is willing to adapt or build its legislation based on public feedback. They're not ignoring our industry."

The researchers say it's critical to study delta-8-THC and other cannabinoids coming to market to inform policies, regulations and practices that minimize the costs, risks and harms while maximizing delta-8-THC's potential benefits.

"While delta-8-THC appears to have some really big, positive attributes, we need to know more, and we should be cautious with any product that's hitting the market unregulated and untested," Jessica Kruger said. "More research needs to be done because this could be a possible way to reduce harm for those who are using cannabis, and for people to have fewer negative reactions."

"There's this huge boom in cannabis related research now, just as there is in the cannabis industry, but there are still so many unknowns," said Daniel Kruger. "Delta-8-THC came to market largely after the Farm Bill

and everyone was saying, 'We don't know anything about this.' As researchers, if the challenge is 'we don't know enough about this,' the answer is 'well, let's study it' because all policies should be informed by empirical evidence."

More information: Daniel J. Kruger et al, Consumer Experiences with Delta-8-THC: Medical Use, Pharmaceutical Substitution, and Comparisons with Delta-9-THC, *Cannabis and Cannabinoid Research* (2021). [DOI: 10.1089/can.2021.0124](https://doi.org/10.1089/can.2021.0124)

Jessica S. Kruger et al, Delta-8-THC: Delta-9-THC's nicer younger sibling?, *Journal of Cannabis Research* (2022). [DOI: 10.1186/s42238-021-00115-8](https://doi.org/10.1186/s42238-021-00115-8)

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