

Rates of e-cigarette and marijuana use not associated with vaping-related lung injuries

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Higher rates of e-cigarette and marijuana use in U.S. states did not result in more e-cigarette or vaping-related lung injuries (known as EVALI), a new study from the Yale School of Public Health finds.

Published in the journal *Addiction*, the study estimates the relationship between states' total reported EVALI cases per capita as of January 2020, and pre-outbreak rates of adult vaping and [marijuana use](#). Results show that higher rates of vaping and [marijuana](#) use are associated with fewer EVALI cases per capita.

"If [e-cigarette](#) or marijuana use per se drove this outbreak, areas with more engagement in those behaviors should show a higher EVALI prevalence," said Assistant Professor Abigail Friedman, the study's author. "This study finds the opposite result. Alongside geographic clusters of high EVALI prevalence states, these findings are more consistent with locally available e-liquids or additives driving the EVALI outbreak than a widely used, nationally-available product."

The Centers for Disease Control and Prevention began a cross-state investigation into vaping-related lung injuries in August 2019, and has since confirmed over 2,800 cases and 68 deaths. In February 2020, the CDC concluded its national updates, and officially classified vitamin E acetate, an additive long linked to EVALI and most common in THC e-liquids that are informally-sourced—i.e., purchased off the street or home-mixed—as "a primary cause of EVALI."

The EVALI outbreak has motivated a variety of state and [federal legislation](#) to restrict sales of nicotine e-cigarettes, including a temporary ban on all e-cigarette sales in Massachusetts in late-2019 and bans on flavored e-cigarette sales in several states and localities. However, if the goal was to reduce EVALI risks, the study suggests that those policies may have targeted the wrong behavior.

A negative relationship between EVALI prevalence and rates of pre-outbreak vaping and marijuana use suggests that well-established markets may have crowded-out use of riskier, informally sourced e-liquids, Friedman said.

Indeed, the five earliest states to legalize recreational marijuana—Alaska, California, Colorado, Oregon and Washington—all had less than one EVALI case per 100,000 residents aged 12 to 64. None of the highest EVALI-prevalence states—Utah, North Dakota, Minnesota, Delaware and Indiana—allowed recreational marijuana use.

Interestingly, Friedman notes that two of the highest-prevalence states' medical marijuana laws forbid smokable marijuana. "If this policy led some recreational marijuana smokers to switch to vaping THC, perhaps in order to avoid detection, it would have increased their likelihood of exposure to contaminated e-liquids when those came on the market. This may have contributed to the higher EVALI prevalence in those states."

It may be important for policymakers to consider the potential unintended consequences of policies that forbid smokable marijuana while allowing THC e-liquids going forward.

More information: Abigail S. Friedman. Association of Vaping-related Lung Injuries with Rates of E-cigarette and Cannabis Use across US States. *Addiction*. First published: 25 August 2020 doi.org/10.1111/add.15235

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