# ASHES, Vol. 16(4) - Statewide bans on public vaping predict reduced e-cigarette use in older adults, but not young adults

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Laws that ban smoking in public spaces, like restaurants, parks, and workplaces, <u>reduce harms</u> related to cigarettes and secondhand smoke. However, many U.S. states have yet to introduce legislation regulating public use of the alarmingly popular <u>e-cigarette</u>. Many people do not <u>consider public smoking bans applicable</u> to vaping, so bans specific to public e-cigarette use, or aerosol-free policies, are likely necessary. But could *aerosol-free policies* encourage people to cut down on e-cigarette use? This week, ASHES reviews a <u>study by Boram Lee, Hsien-Chang Lin, and Dong-Chul Seo</u> that examined the relationship between states with and without aerosol-free policies, and the vaping behavior of their residents.

### What was the research question?

Do statewide aerosol-free policies, as well as age and smoking history, predict U.S. adults' e-cigarette use?

### What did the researchers do?

Lee and colleagues analyzed <u>data</u> from 240,849 participants aged 18 to 59<sup>1</sup> in the 2016 <u>Behavioral Risk Factor Surveillance System</u>, a national survey administered by the Centers for Disease Control and Prevention. They excluded survey respondents from California, Vermont, and Washington D.C. because these areas introduced aerosol-free policies in 2016, <u>the year of the survey</u>. The survey assessed respondents' age, state of residence, whether respondents regularly used e-cigarettes (either every day or some days), and whether they currently or had ever <u>smoked cigarettes frequently</u>. The researchers used <u>chi-square</u> and <u>logistic regression</u> tests to determine whether age, smoking history, and/or state of residence differentiated participants who used e-cigarettes from participants who used e-cigarettes from participants

## What did they find?

Nine U.S. states/territories included in the study instated aerosol-free policies before 2016, while 47 states/territories did not; only about 1 in 10 participants lived in states with aerosol-free policies. Those who lived in states/territories with aerosol-free policies were significantly less likely to report current vaping and smoking than those in states/territories without aerosol-free policies. Respondents aged 18-24 were more likely to vape than those aged 25-59, but the researchers also found an interaction between age group and aerosol-free policy: aerosol-free policy predicted lower vaping rates in adults aged 25-59, but did not predict vaping rates in adults aged 18-24. However, being a current or former smoker was a much stronger predictor of e-cigarette use than state of residence (see figure).



Figure. Left: U.S. states with and without aerosol free policies at time of data collection. States/territories with aerosol-free laws include Connecticut, Delaware, Hawaii, Maine, New Jersey, North Dakota, Oregon, Utah, and Puerto Rico (not pictured). Right: <u>Odds ratios</u> showing the likelihood of regularly using e-cigarettes, by residence in a state with or without public vaping policy (top) and by smoking history. Note that the effects of smoking history dwarf the effects of state. Click image to enlarge.

### Why do these findings matter?

There are two main takeaways from this study. First, statewide aerosol-free policies could reduce e-cigarette use in older adults, but not necessarily younger adults. Vaping is <u>more popular with younger consumers</u>, who also <u>vape more</u> <u>often in areas where smoking is banned</u>, and either <u>don't know the harms</u> of

vaping or <u>don't care</u>. Therefore, this age group might resist regulations. Second, smoking history predicted e-cigarette use far better than U.S. state, suggesting that stricter regulation of traditional cigarettes and providing <u>viable methods to</u> <u>smoking cessation other than vaping</u> would result in a greater reduction in e-cigarette use, rather than just banning vaping in public. That being said, aerosol-free policies have other possible benefits other than reducing vaping prevalence, such as preventing the <u>renormalization of smoking</u> in public spaces.

## Every study has limitations. What are the limitations in this study?

These results are <u>cross-sectional</u>, so <u>causality</u> cannot be determined; e-cigarette prevalence could influence policy, and/or vice versa, and/or an <u>unmeasured third</u> <u>variable</u> could influence this relationship. The researchers only studied statewide policies, but the relationship between regulations and vaping behavior could differ between municipalities within states as well.

## For more information:

<u>SmokeFree</u> offers tools and tips for quitting and maintaining abstinence from smoking tobacco. The <u>Centers for Disease Control and Prevention</u> offers information, tips, and tools about e-cigarettes and how to quit. For self-help tools, please visit The BASIS <u>Addiction Resources</u> page.

— Jamie Juviler

What do you think? Please use the comment link below to provide feedback on this article.

[1] The researchers excluded respondents aged 60 and older because not enough participants in this age group used e-cigarettes for proper analysis.

[2] In all analyses, the researchers <u>controlled</u> for sociodemographic variables including age, sex, race, education, and household income. They also accounted for <u>smoking prevalence by U.S. state</u> in 2016 and for clustering of participants by state in their regression models.