

# 'Ice' flavored e-cig use may be linked to nicotine dependence among the young

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The use of 'ice' flavored e-cigarettes may be common and positively associated with conventional smoking and nicotine dependence among young adults, suggests research published online in the journal *Tobacco*

*Control.*

And it's unclear where these 'hybrid' vapes, combining fruit/sweet and cooling flavors, fit into current or future regulatory frameworks, which apply restrictions according to distinct [flavor](#) categories, point out the study authors.

'Ice' flavored e-cigarettes—marketed as a combination of fruity/sweet and cooling flavors, such as 'blueberry ice' or 'melon ice'—recently entered the US market. Previous research suggests that young adult vapers prefer either fruit/sweet or menthol/mint flavors.

To try and gauge the appeal of these 'hybrid' vape flavors, and see if they might be linked to other behaviors around [vaping](#) and/or smoking among young adults, the study authors drew on 344 online survey responses submitted between May and August 2020.

The survey was part of the Happiness & Health Study—a prospective study of health behaviors which originally recruited 3396 ninth grade students in Los Angeles, California, in 2013.

The survey aimed to find out if respondents vaped and if so, which flavor they had used most often in the preceding 30 days: menthol/mint; fruit/sweet; or ice.

Respondents, whose average age was 21, were also asked if they smoked regular cigarettes, what symptoms of vaping dependency they had, and how often, and what type of vaping device they used.

Among the 407 ethnically diverse respondents who had vaped in the past 30 days, 383 provided information on flavors, but after excluding those who responded 'flavourless' or 'tobacco flavored', the final analysis included 344 responses.

Overall, 168 (49%) reported most often using ice flavors; 60 (17%) menthol/mint; and 116 (34%) fruit/sweet.

Compared with the vapers of menthol/mint flavored e-cigarettes, those vaping ice flavored e-cigarettes were more likely to report smoking regular cigarettes over the previous 30 days: 31.5% vs 22%.

Ice flavor vapers were also less likely than menthol/mint vapers to report using rechargeable devices and more likely than fruit/sweet flavor users to use disposable non-cartridge devices: 65% vs 35%.

Disposable e-cigarettes are among the fastest growing segments of the e-cigarette market, note the study authors.

Ice flavor vapers were more likely to report symptoms of vaping dependence than fruit/sweet flavor vapers (67% vs 43%), to have started vaping during high school (74% vs 65%), and to report more daily vaping episodes: around 11 vs 8.

And they were also more likely than fruit/sweet or menthol/mint flavor vapers to report more vaping days over the past month: average 17 vs 12.

The study authors point out that their research relied on recall and didn't measure nicotine intake nor did it differentiate between e-cigarettes containing nicotine and those that didn't.

"While causality cannot be inferred from this cross sectional study," they caution, "it is possible that exposure to e-cigarettes in ice flavors may somehow increase nicotine vaping frequency and dependence," they add.

"Previous clinical laboratory studies show that [fruit](#) and [menthol](#) flavors each independently increase the appeal of e-cigarettes and suppress the aversive qualities of nicotine in [young adults](#) by creating perceptions of

sweetness and coolness, respectively," they explain.

"Because ice flavors represent a hybrid that may contain both cooling and fruity flavoring constituents, it is unclear how these flavors fit into current and future regulatory policies that place differential restrictions across different flavor categories," they highlight.

"Further studies of the specific cooling agents and chemical constituents in ice flavored products and the health effects of ice flavored [e-cigarette](#) use are warranted," they conclude.

**More information:** 'Ice' flavoured e-cigarette use among young adults, *Tobacco Control* (2021). [DOI: 10.1136/tobaccocontrol-2020-056416](https://doi.org/10.1136/tobaccocontrol-2020-056416)

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