

# The association of e-cigarette flavors with satisfaction, enjoyment, and trying to quit or stay abstinent from smoking among regular adult vapers from Canada and the United States: Findings from the 2018 ITC Four Country Smoking and Vaping.

Gravelly, S., Cummings, K.M., Lindblom, E., Smith, D.M., Martin, N., Loewen, R., Borland, R., Hyland, A., Thompson, M.E., Boudreau, C., Kasza, K.A., Ouimet, J., Quah, A.C.K., O'Connor, R.J., Fong, G.T.

## Abstract

**Introduction:** This study examined whether non-tobacco flavors are more commonly used by vapers (e-cigarette users) compared to tobacco flavor, described which flavors are most popular, and tested whether flavors are associated with: vaping satisfaction relative to smoking, level of enjoyment with vaping, reasons for using e-cigarettes, and making an attempt to quit smoking by smokers.

**Methods:** This cross sectional study included 1,603 adults from Canada and the US who vaped at least weekly, and were either current smokers (concurrent users) or former smokers (exclusive vapers). Respondents were categorized into one of seven flavors they used most in the last month: tobacco, tobacco-menthol, unflavored, or one of the non-tobacco flavors: menthol/mint, fruit, candy, or 'other' (e.g. coffee).

**Results:** Vapers use a wide range of flavors, with 63.1% using a non-tobacco flavor. The most common flavor categories were fruit (29.4%) and tobacco (28.7%), followed by mint/menthol (14.4%) and candy (13.5%). Vapers using candy (41.0%,  $p < 0.0001$ ) or fruit flavors (26.0%,  $p = 0.01$ ) found vaping more satisfying (compared to smoking) than vapers using tobacco flavor (15.5%) and rated vaping as very/extremely enjoyable (fruit: 50.9%; candy: 60.9%) than those using tobacco flavor (39.4%). Among concurrent users, those using fruit (74.6%,  $p = 0.04$ ) or candy flavors (81.1%,  $p = 0.003$ ) were more likely than tobacco flavor users (63.5%) to vape in order to quit smoking. Flavor category was not associated with the likelihood of a quit attempt ( $p = 0.46$ ). Among exclusive vapers, tobacco and non-tobacco flavors were popular; however, those using tobacco (99.0%) were more likely than those using candy (72.8%,  $p = 0.002$ ) or unflavored (42.5%,  $p = 0.005$ ) to vape in order to stay quit.

**Conclusions:** A majority of regular vapers in Canada and the US use non-tobacco flavors. Greater satisfaction and enjoyment with vaping is higher among fruit and candy flavor users. While it does not appear that certain flavors are associated with a greater propensity to attempt to quit smoking among concurrent users, non-tobacco flavors are popular among former smokers who are exclusively vaping. Future research should determine the likely impact of flavor bans on those who are vaping to quit smoking or to stay quit.

## Recommended Citation

Gravelly, S., Cummings, K.M., Lindblom, E., Smith, D.M., Martin, N., Loewen, R., Borland, R., Hyland, A., Thompson, M.E., Boudreau, C., Kasza, K.A., Ouimet, J., Quah, A.C.K., O'Connor, R.J., Fong, G.T. (2020). The association of e-cigarette flavors with satisfaction, enjoyment, and trying to quit or stay abstinent from smoking among regular adult vapers from Canada and the United States: Findings from the 2018 ITC Four Country Smoking and Vaping Survey. *Nicotine and Tobacco Research*, [Published online, doi:<https://doi.org/10.1093/ntr/ntaa095>].

**Link:** <https://academic.oup.com/ntr/advance-article/doi/10.1093/ntr/ntaa095/5843872>