



Impairment of Olfactory-Guided Behavior by Exposure to E-cigarette Aerosol

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The popularity of electronic (e)-cigarettes has dramatically increased in recent years. A correlation between increased adverse health effects and greater e-cig consumption is evident. However, there is a lack of research concerning the effects on nasal chemosensory function. To investigate the e-cig-mediated health effects and toxicity to chemosensory systems, we exposed selected transgenic mice to either vanillin flavored e-liquid aerosol or air as a control and performed behavioral testing to assess trigeminal and olfactory function after a four-week exposure. We found that mice showed a diminished ability to perform olfactory based tasks such as locating buried food and detecting sexually relevant odors after the daily e-cigarette aerosol exposure. Aerosol exposed animals also tended to favor an e-liquid solution over a water sample. Our results demonstrate that sub-chronic inhalation exposure to e-liquid aerosol results in olfactory deficits illustrated by impaired behavior. These results combined with future electrophysiological and immunohistochemical data could provide a clear picture of the chemosensory effects of vaping.

This work is supported by NIH/NIDA research grant 1R21DA046349 to Dr Lin and was partially funded by the USM LSAMP program, supported by NSF LSAMP Award #1619676.