

# Study suggests flavored e-cigarettes may worsen asthma

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A study into the impact of flavoured e-cigarettes, on allergic airways disease, suggests that some flavours may worsen the severity of diseases such as asthma. For the first time a model of asthma was used to investigate the effect of a range of popular e-cigarette flavours, with and without nicotine.

The use of e-cigarettes has dramatically increased in the past few years especially among younger smokers—an estimated nine percent of 18-24 year olds in the United States are current e-cigarette users.

Despite the suggestion they are a healthier alternative to tobacco cigarettes there is a lack of evidence in both animal studies and human data on the effect of e-cigarettes on lung function.

The results of a study led by researchers from the University of Technology Sydney (UTS), University of Vermont, USA and the Woolcock Institute of Medical Research, Australia, show that some flavoured e-cigarettes, even without nicotine, may change how airways, affected by an allergic

disease, function.

Dr. David Chapman, UTS researcher and lead author of the study published in *Scientific Reports*, said this was the first study to investigate the effects of flavoured e-cigarettes with and without nicotine on allergic airways disease.

"This is especially important for those with respiratory disease, whom are vulnerable to the effects of smoking," Dr. Chapman said.

"The majority of e-cigarette smokers use flavoured liquids but there is some evidence that flavour additives can be toxic when inhaled," Dr. Chapman said.

The researchers found some flavoured e-cigarettes, even in the absence of nicotine, can worsen disease severity.

"The exact effects on features of asthma were dependent upon the specific flavour, suggesting not all flavoured e-cigarettes will have the same consequences on lung health," Dr. Chapman said.

In this study the flavour Black Licorice exaggerated airway inflammation whereas Cinnacide had the opposite effect, suppressing airway inflammation. Additionally, Cinnacide increased airway sensitivity and Banana Pudding flavour exaggerated the level of tissue scarring. All [e-cigarette](#) liquids containing nicotine suppressed [airway](#) inflammation, consistent with the known anti-inflammatory properties of [nicotine](#).

The researchers didn't analyse the liquids directly, to confirm what they contained, however there is evidence from previous research that flavours categorised as "buttery/creamy" and "cinnamon", which likely include Banana Pudding and Cinnacide, respectively, are toxic.

The researchers conclude that caution should be

taken in promoting the use of flavoured e-cigarettes to patients with respiratory [disease](#) such as asthma and that [policy makers](#) should consider restricting the use of flavoured e-cigarettes.

**More information:** *Scientific Reports* (2019). [DOI: 10.1038/s41598-019-50223-y](#)

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