

E-cigarettes associated with wheezing, shortness of breath

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The use of e-cigarettes is associated with wheezing and shortness of breath in young adults and adolescents, even in those who don't smoke cigarettes or marijuana, according to research presented at the ATS 2021 International Conference.

Alayna P. Tackett, Ph.D., assistant professor of preventive medicine, University of Southern California Keck School of Medicine, and colleagues conducted a web-based survey of 2,931 adolescents and [young adults](#) (average age: 18.9) with questions on the use of e-cigarettes, cigarettes and cannabis, along with self-reported asthma diagnosis and [respiratory symptoms](#), over the previous 30 days. The survey was fielded between August 6 and 30, 2020 among a national convenience sample of youth and young adults aged 14-21 using Lucid, a survey management company. Recruitment, data collection, and compensation were handled by Lucid and company partners. Statistical analyses were used by the researchers to examine possible relationships among these variables.

They found that, after controlling for age, gender and race/ethnicity, past 30-day e-cigarette use was associated with increased odds of self-reported asthma, wheezing and shortness of breath, compared with survey respondents who reported never using e-cigarettes. This relationship held true, even after statistically controlling for those who said they had ever used cigarettes or cannabis. After controlling for past 30-day cigarette and cannabis use, past 30-day e-cigarette use was no longer associated with asthma—but was still associated with shortness of breath and increased wheezing.

The prevalence of asthma, wheeze and shortness of breath was 24 percent, 13 percent and 20 percent, respectively. Among past 30-day e-cigarette users, 15 percent reported using cigarettes and 37 percent reported cannabis use.

"As more products, including cannabis and various e-cigarette devices, enter the market, assessing respiratory health will be important both where adolescents and young adults receive their [health care](#) and in research," said Dr. Tackett. "This preliminary study highlights the need for more [longitudinal studies](#) and studies that incorporate objective assessments of respiratory health to further determine the specific respiratory risks from e-cigarettes. We also need to better understand the [complex relationships](#) between these products and whether multiple product use is associated with worse respiratory outcomes."

The number of adolescents and young adults who use e-cigarettes continues to increase, with estimates of 5.4 million new users in 2019. E-cigarettes are the most commonly used tobacco product in this age group, but researchers have found it difficult to disentangle the risk of asthma and related respiratory symptoms associated with e-cigarettes due to a high frequency of cigarette and cannabis smoking among e-cigarette users age 14-21.

"Wheeze and [shortness of breath](#) are just two indicators of many to assess respiratory health," said Dr. Tackett. "The respiratory system is complex and it may be that measuring respiratory [health](#) more frequently through such means as spirometry may help tell us more about the relationship between e-cigarette use, multiple product use and respiratory outcomes."

Dr. Tackett's team is currently conducting two follow-up studies that use objective measurement tools like handheld, home-based spirometry to examine adolescent and young adult reported respiratory symptoms. Those who exclusively use e-cigarettes as well as those who have never used them will be recruited to examine their differences and better understand the relationship between [e-cigarette](#) use and [respiratory health](#).

More information: A. P. Tackett et al. Adolescent and Young Adult Use of Tobacco and Nicotine Products: Associations with Respiratory Symptoms. conference.thoracic.org/program/abstract/abstract-search.php?sid=P7397

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