
Adolescent E-cigarette Users Are More Likely Than Never-users to Progress to Cigarette Smoking, Even Among Those Who Had no Intention to Start Smoking

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INTRODUCTION

E-cigarette use is a relatively new risk factor for nicotine use disorder among U.S. adolescents. In 2019, 28% of high school students and 11% of middle school students were current e-cigarette users. With the emergence of newer and potentially highly addictive e-cigarette products, adolescents who use e-cigarettes are at increased risk of developing nicotine use disorder and progressing to smoke conventional cigarettes. However, what remains unclear is which e-cigarette users progress to cigarette smoking, and why?

One hypothesis is that adolescent e-cigarette users who progress to cigarette smoking are simply those who would have smoked cigarettes anyway even without exposure to e-cigarettes.

This brief reports on a study that challenges that hypothesis by using a theory-guided approach to isolate the effect of e-cigarette use on cigarette smoking. The authors investigate whether the progression to cigarette smoking is truly dependent on prior predisposition to smoke cigarettes. In other words, the authors ask whether e-cigarette users who have no intention to smoke cigarettes are protected from making that transition.

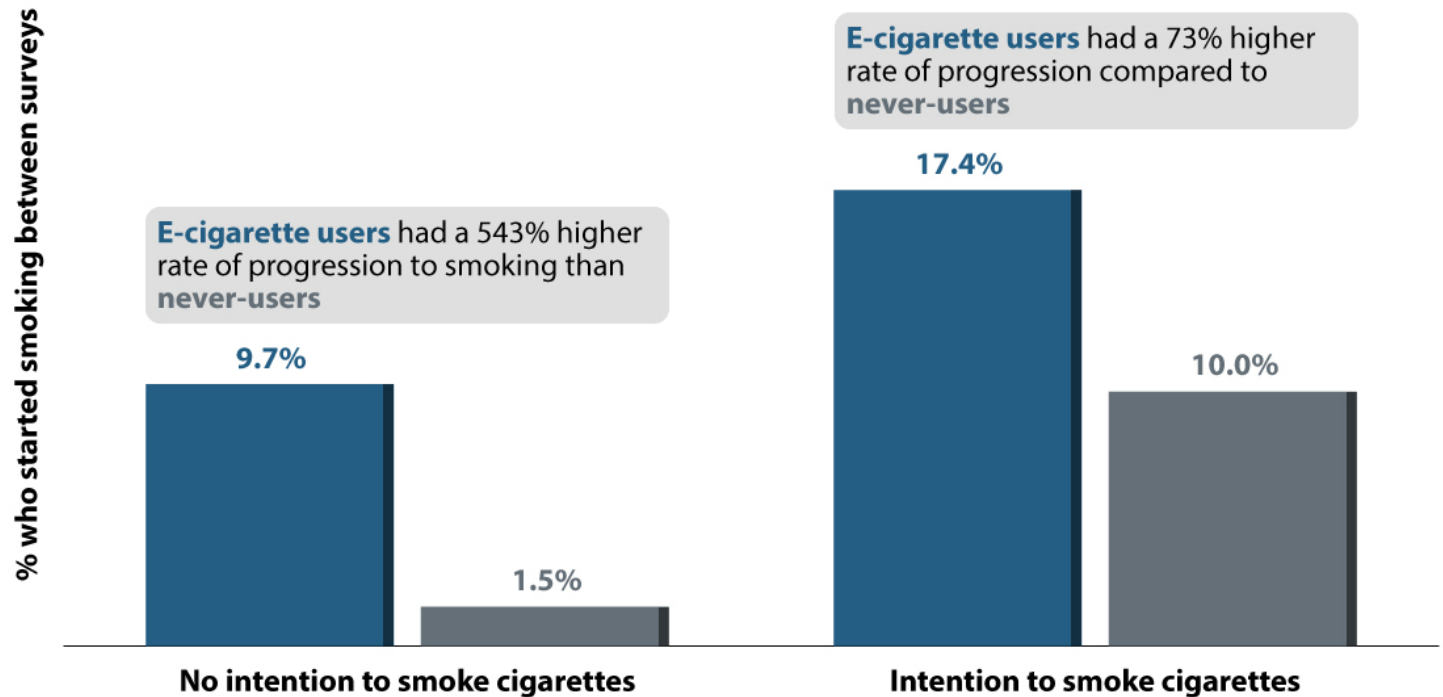
The authors use data on adolescents aged 12-17 from two rounds of the Population Assessment of Tobacco and Health (PATH) study, a nationally representative household cohort study of tobacco use among civilian, non-institutionalized U.S. population. In the survey conducted in 2014-2015, adolescents were asked if they had ever used e-cigarettes and whether they had an intention to start smoking cigarettes. In the 2015-2016 survey conducted one year later, the same adolescents were asked if they had progressed to smoking cigarettes.

KEY FINDINGS

- ▶ Among adolescent never-smokers who had no intention to smoke cigarettes, 9.7% of e-cigarette users progressed to cigarette smoking after one year, compared to 1.5% of never e-cigarette users. E-cigarette users were also over four times more likely than never e-cigarette users to have progressed to smoke cigarettes one year later. *See Figure, next page.*
- ▶ E-cigarette use predicted cigarette smoking only among adolescent never-smokers who had no prior intentions to smoke cigarettes.
 - ▶ This finding debunks the hypothesis that e-cigarette users who progress to cigarette smoking are simply those who are already predisposed to cigarette smoking and would have progressed to cigarette smoking even without exposure to e-cigarettes
 - ▶ Indeed, e-cigarette use was associated with higher risk of cigarette smoking among adolescents who had no prior smoking intention but not among those who had previously expressed intention to smoke cigarettes.

More adolescent e-cigarette users started smoking cigarettes one year later than adolescents who had never used e-cigarettes, including those who had no intention to start smoking

The relative rate of progression to cigarette smoking was larger for e-cigarette users who had not intended to smoke



Results are for U.S. adolescents aged 12-17 from Waves 2 and 3 of the Population Assessment of Tobacco and Health (PATH) study.

POLICY IMPLICATIONS

These findings inform future adolescent smoking prevention efforts. With the proliferation of e-cigarettes among adolescents, adolescents who have no intention to smoke conventional cigarettes still may progress to cigarette smoking if they use e-cigarettes. On the other hand, abstinence from e-cigarette use can protect adolescents from starting cigarette smoking.

It is essential that pediatricians, other health care providers, and education campaigns emphasize the dangers associated with e-cigarette use. These education efforts should include the risk of progressing to cigarette smoking even among adolescents who have no intention to smoke cigarettes.

Tailored interventions that emphasize abstinence from e-cigarette use may be effective in preventing cigarette smoking among adolescents. Indeed, abstinence from e-cigarette use should be framed as an adolescent smoking prevention strategy.

Finally, tobacco control policies that discourage e-cigarette use among adolescents, including a ban on all flavors and age-restriction on sales, should be enforced in all U.S. states.

REFERENCE

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