

# Cigarette Smoking Susceptibility Modifies The Effect Of ENDS Use On Youth Cigarette Smoking Initiation

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## Introduction

- Public health concerns about electronic nicotine delivery systems (ENDS) include very high youth use prevalence and possible increased risk of cigarette smoking initiation.
- The ‘common cause’ hypothesis posits that youth who smoke cigarettes after ENDS use would have smoked in the absence of ENDS use because of underlying predispositions like the susceptibility to smoking. Alternatively, ENDS use could increase the risk of smoking cigarettes initiation independent of smoking susceptibility.
- The Population Assessment of Tobacco and Health Study data collects longitudinal data on cigarette smoking susceptibility (intention to smoke, curiosity about smoking, likelihood of smoking if offered by a friend) as well as ENDS use and cigarette smoking.
- Using this data, we assessed whether youth ENDS use is associated with cigarette smoking initiation while considering smoking susceptibility.

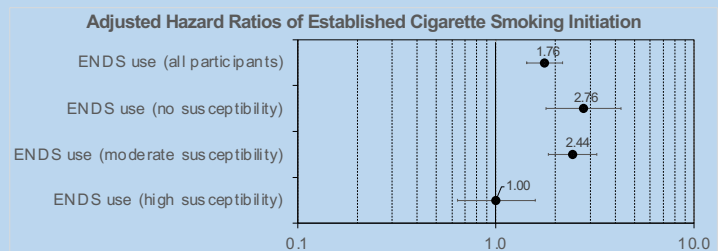
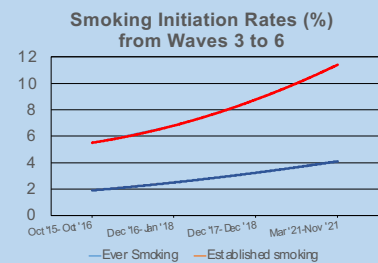
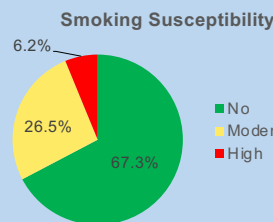
## Methods

- Data:** Weighted Waves 2 (Oct 2014-Oct 2015) to 6 (Mar 2021-Mar 2021) PATH Study data for Wave 2 adolescents who reported never smoking cigarettes (n=11,501). Missing data were imputed using multiple imputations.
- Measures:**
  - ENDS use:** any past 30-day use
  - Cigarette smoking:** ever use and established use (100 or more lifetime cigarettes smoked)
  - Cigarette smoking susceptibility:** definitely yes, probably yes, or probably no responses to having the intention to smoke, being curious about smoking, or the likelihood of smoking if a friend offers a cigarette.
  - Covariates:** other substance use, household smoking, grades, sensation seeking, age, sex, race/ethnicity, parent education, household income
- Analysis:** Discrete-time survival analysis of ever and established cigarette smoking initiation and past 30-day ENDS use with covariates.

## Key Takeaways

- Most US youth report no cigarette smoking susceptibility (intention, curiosity, or smoking likelihood if a friend offers).
- ENDS use during adolescence increases the risk of established cigarette smoking initiation independent of smoking susceptibility.
- In fact, the risk of established cigarette smoking initiation associated with ENDS use increases with decreasing susceptibility.
- Policymakers should consider the increased risk of established cigarette smoking associated with youth ENDS use when regulating ENDS, such as limiting youth marketing, appeal, and access.

## Results



## Findings

- At Wave 2, 3.6% of adolescents reported past 30-day ENDS use, 67% had no cigarette smoking susceptibility, and 6% had high susceptibility.
- ENDS use was not associated with ever cigarette smoking initiation but was associated with initiation of established cigarette smoking.
- Findings support the “common cause” and “independent cause” hypotheses. ENDS use was not associated with established smoking in youth who were highly susceptible to cigarette smoking but was associated with smoking in youth who had no or moderate susceptibility.

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