

# E-CIGARETTE USE AS A RISK *factor* FOR FUTURE COMBUSTIBLE TOBACCO USE *among* NONSMOKERS

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## BACKGROUND

In an aggressive marketing environment, electronic cigarettes (e-cigarettes) have become increasingly popular, especially among youth (Durmowicz, 2014). The potential for e-cigarettes to serve as a gateway to combustible tobacco products is currently under investigation (Bunnell et al., 2014), although recent studies demonstrate that about a third of current e-cigarette users were not smokers when they initiated e-cigarette use (McMillen et al., in press). Social influences on current combustible cigarette use include having parents and close friends who use tobacco and being exposed to tobacco advertisements (Dube et al., 2013; Tyas & Pederson, 1998). The present study examines the effects of e-cigarette use on youth's intentions of future combustible cigarette use.

Participants	Unweighted N = 4808	Weighted
<b>Sex</b>		
Male	47.4%	49.6%
Female	52.1%	50.0%
<b>Grade</b>		
9th	34.5%	28.6%
10th	23.9%	26.0%
11th	21.0%	23.4%
12th	20.2%	21.5%
<b>Race</b>		
White	45.1%	41.6%
Black	42.7%	49.9%
Other	10.6%	7.7%

		Current E-Cigarette User	
		Yes	No
Nonsmoker smoking susceptibility (within next year)	Not Susceptible	37.1%	75.4%
	Susceptible	62.9%	24.6%

Note:  $p < .001$

Table 3 Logistic Regression

	Non-Smoker Susceptibility to Smoking Odds Ratio (95% C.I.)	Level of Significance
<b>Currently Uses E-Cigarettes</b>		
Yes	5.1 (2.2-11.6)	$p < .001$
No	Reference	Reference
<b>Past 7-Day Exposure in Home</b>		
Yes	1.4 (1.2-1.7)	$p = .001$
No	Reference	Reference
<b>Close Friends Who Smoke</b>		
Yes	2.6 (2.2-3.2)	$p < .001$
No	Reference	Reference

Note: The model statistically controlled for sex, grade, and race.

## METHODOLOGY

### 2011-2013 MS Youth Tobacco Survey

We pooled three years of cross-sectional data from the Mississippi Youth Tobacco Survey for years 2011-2013. We applied a multi-stage sample design with public high schools selected proportional to enrollment size. Classrooms were chosen randomly within selected schools and all students in selected classes were eligible for participation. Data were collected by means of an anonymous self-administered questionnaire. The questions were group administered in classrooms during a normal class period by teachers following standardized procedures.

## OBJECTIVE

We sought to examine if e-cigarette use by non-smoking youth was a risk factor for future use of combustible cigarettes above and beyond other social influences and risk factors.

## DISCUSSION AND FUTURE IMPLICATIONS

Nonsmokers who use e-cigarettes are five times more likely than non-users to be susceptible to use of combustible tobacco products within the next year. E-cigarettes are aggressively marketed and subject to few state and federal regulations, and use among youth is increasing (CDC, 2013). This study identified e-cigarette use as an important risk factor for future combustible cigarette use. Although this does not necessarily indicate a causal relationship, the knowledge that an individual who uses e-cigarettes may be more vulnerable to combustible use does help with targeting individuals for interventions. Future research should examine this relationship in a sample with a larger number of current e-cigarette users as well as the potential transition from e-cigarettes to combustible tobacco product in youth and other groups.

## REFERENCES

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## RESULTS

Bivariate and multivariable analyses were used to analyze the relationship between nonsmokers who currently use e-cigarettes and their susceptibility to smoking within the next year. We controlled for social influences such as the number of close friends who smoke and past 7-day exposure to smoke in the home, as well as demographic characteristics. Nonsmokers who use e-cigarettes are five times more likely to report susceptibility to smoking combustible tobacco products within the next year compared to those who do not use e-cigarettes. This relationship remained even after controlling for other risk factors.

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