

# Associations of ADHD Symptoms with Smoking and Alternative Tobacco Product Use Initiation during Adolescence.

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## Abstract

### OBJECTIVE:

Recently, use of alternative tobacco products, such as electronic cigarettes (e-cigarettes) and hookah (water-pipe tobacco), has increased among adolescents. It is unknown whether attention-deficit hyperactivity disorder (ADHD) symptoms are associated with initiation of alternative tobacco product use.

### METHODS:

Ninth grade high school students who never used any tobacco product at baseline (N = 1,921) participated in a longitudinal survey from 2014 to 2015. Overall symptomatology and inattention (IN) and hyperactivity-impulsivity (HI) ADHD subtypes were assessed at baseline. Past 6-month e-cigarette, hookah, and combustible cigarette use (yes/no) were reported at three semi-annual follow-ups. Repeated measures logistic regression models assessed the association of baseline ADHD symptoms with likelihood of tobacco product initiation across follow-ups.

### RESULTS:

For ADHD main effect estimates, unadjusted odds of reporting e-cigarette, hookah, and combustible cigarette use pooled across follow-up time points were 45%, 33%, and 37% greater, respectively, with each increase in one SD-unit of baseline ADHD symptoms in baseline never-users of tobacco products. ADHD was not associated with hookah or combustible cigarette use after adjusting for other risk factors. After adjustment, e-cigarette use initiation remained associated with overall ADHD (odds ratio, OR [95%confidence interval, 95% CI] = 1.22 [1.04, 1.42]) and HI (OR [95% CI] = 1.26 [1.09, 1.47]) symptoms, but not IN symptoms (OR [95% CI] = 1.13 [0.97, 1.32]). ADHD × Time interactions were not significant, suggesting ADHD increased odds of e-cigarette use initiation but did not alter the shape of use trajectory across follow-up among initiators.

### CONCLUSIONS:

Understanding the psychosocial mechanisms underlying the pathway from ADHD to e-cigarette use may advance tobacco product use etiologic theory and prevention practice in the current era in which e-cigarette use is popular among youth.