

## **Longitudinal association between exposure to e-cigarette advertising and youth e-cigarette use in the United States.**

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**Introduction:** This study examined the longitudinal relationship between recalled exposure to e-cigarette advertisements on social media and across five traditional advertising mediums, and e-cigarette use, a year later.

**Method:** Weighted regression analyses of waves 4 (W4; 2017), 4.5 (W4.5; 2018) and 5 (W5; 2019) of youth aged 12-17 years from the Population Assessment of Tobacco and Health Study. We examined the association between past 30-day recalled exposure to six different e-cigarette advertisement mediums (gas stations, social media, print, radio, billboard, TV) in W4.5 and past 30-day and past 12-month e-cigarette use in W5, while controlling for W4 e-cigarette use and covariates. Associations between recalled exposure (W4.5) and lifetime use (W5) among e-cigarette naïve youth at W4.5 (N=8,914) were also assessed.

**Results:** Past 12-month and past 30-day e-cigarette use was significantly associated with recalled exposure to e-cigarette advertisement on social media (aOR=1.65 [99.17%CI=1.36,1.99; aOR=1.49 [99.17%CI=1.13, 1.97]) and gas stations (aOR=1.33; [99.17%CI=1.11,1.58]; aOR=1.27 [99.17%CI=1.03,1.58]). Exposure to e-cigarette advertisement on social media (aOR=1.35 [99.17%CI=1.04,1.74]) and gas stations (aOR=1.67 [99.17%CI=1.31,2.13]) was significantly associated with lifetime e-cigarette use among baseline youth who were e-cigarette naïve.

**Discussions and Conclusions:** Exposure to e-cigarette advertisement on social media/websites and gas stations/convenience stores was associated with youth e-cigarette use a year later.

**Implications for Practice or Policy:** Stricter restrictions on marketing on social media and at gas stations is needed to limit youth exposure to e-cigarette marketing messages if we are to reduce e-cigarette use.

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