

## Factors Associated with Changes in ENDS Dependence: Findings from Waves 2 and 3 of the VAPER Study

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### Background

Little is known about how demographics, device/liquid characteristics, and smoking status impact future dependence among people who use electronic nicotine delivery systems (ENDS). To address this gap, we evaluated the changes in ENDS dependence in a cohort of adults who frequently use ENDS.

### Methods

- This sample includes US adults (21+) who use ENDS 5+ days/week from waves 2 (12/2020-4/2021) and 3 (9/2021-11/2021) of the VAPER Study (N=628).
- Changes in E-cigarette Dependence Scale scores between waves were coded as increasing, decreasing, or stable. People who never smoked were defined as <100 cigarettes; people who currently smoke as ≥100 cigarettes + past 30-day use; people who quit or recently stopped smoking as ≥100 cigarettes + no past 30-day use.
- Device and liquid characteristics were from coded photo data; if unavailable, self-reports were used.
- Analyses included chi-square tests with Bonferroni correction for pairwise comparisons and multinomial regression.



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### Results

- Overall, between waves 2 and 3, 20% (n=126) reported no change in ENDS dependence, 36% (n=224) reported a decrease, and 44% (n=278) reported an increase.
- Smoking status was associated with a change in ENDS dependence ( $p<0.05$ ). A larger proportion of people who currently smoke had decreased ENDS dependence and a smaller proportion with no change, compared to people who never smoked ( $p=0.011$ ).
- Demographics (age, gender, race, income, sexual orientation, and region) and device and liquid characteristics (device type, nicotine formulation, device-liquid grouping, nicotine concentration) were not associated with changes in ENDS dependence.

People who use ENDS but never smoke had **more stable ENDS dependence** than people who use ENDS and smoke.

Those who use ENDS and smoke were **more likely** to have **decreasing ENDS dependence**.



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Learn more about the Vaping and Patterns of E-Cigarette Use Research (VAPER) Study

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### Conclusions

- A within persons relationship between smoking status and ENDS dependence change emerged within a year.
- People who currently smoke may be less likely to have stable ENDS dependence and more likely to have decreasing ENDS dependence as compared to people who never smoked—warranting further study.
- Regulations that impact ENDS dependence could vary in effect based on individual smoking status.

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