

# Measures of Nicotine Dependence and E-Cigarette Use: Findings from a National Probability-Based Sample of U.S. Youth and Young Adults

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	Tobacco industry	E-cigarette & nicotine product industry (excluding pharma)	Pharma industry
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## Background

E-cigarettes are the most commonly used tobacco product among young people in the U.S. E-cigarettes deliver nicotine, which creates and sustains addiction and can harm the developing brain. It is imperative to examine indicators of nicotine dependence and patterns of e-cigarette use among youth and young adults to inform prevention efforts and effective cessation strategies.

## Methods

### Data Source

- Data were drawn from Wave 4 (fielded February-June 2024) of the Tobacco Epidemic Evaluation Network (TEEN+) Study, a national probability-based cohort of youth (13-17 years) and young adults (18-26 years).
- Respondents were recruited from an address-based household sampling frame to complete an online survey of tobacco product use and related knowledge and attitudes.

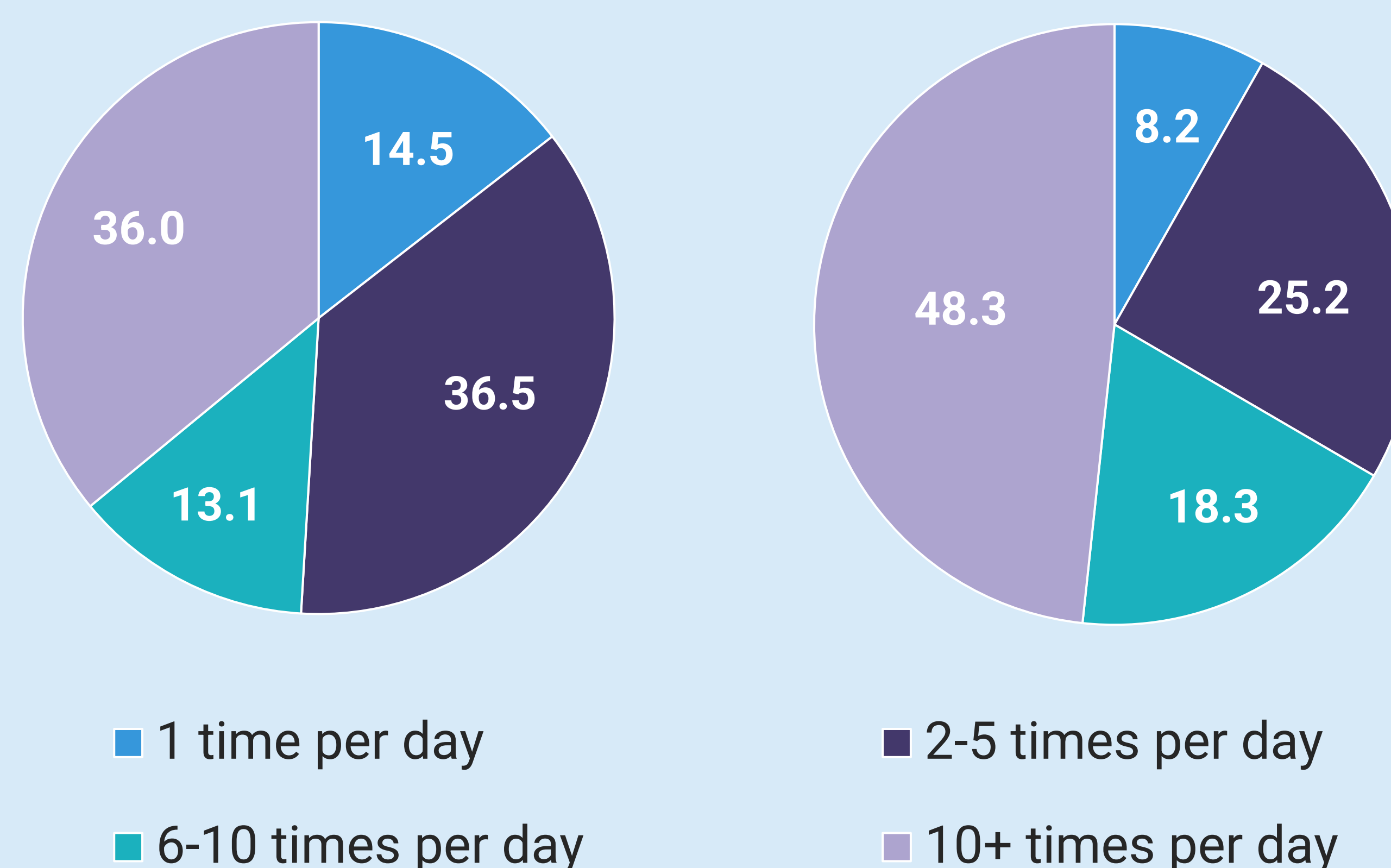
### Measures

- Survey constructs included sociodemographic characteristics, e-cigarette use and related behaviors. Youth and young adults who used e-cigarettes in the past 30-days were asked several measures of dependence.

## Past 30-Day E-Cigarette Use Intensity

*"On the days you used e-cigarettes, how many times did you usually pick up your e-cigarette device to vape?"*

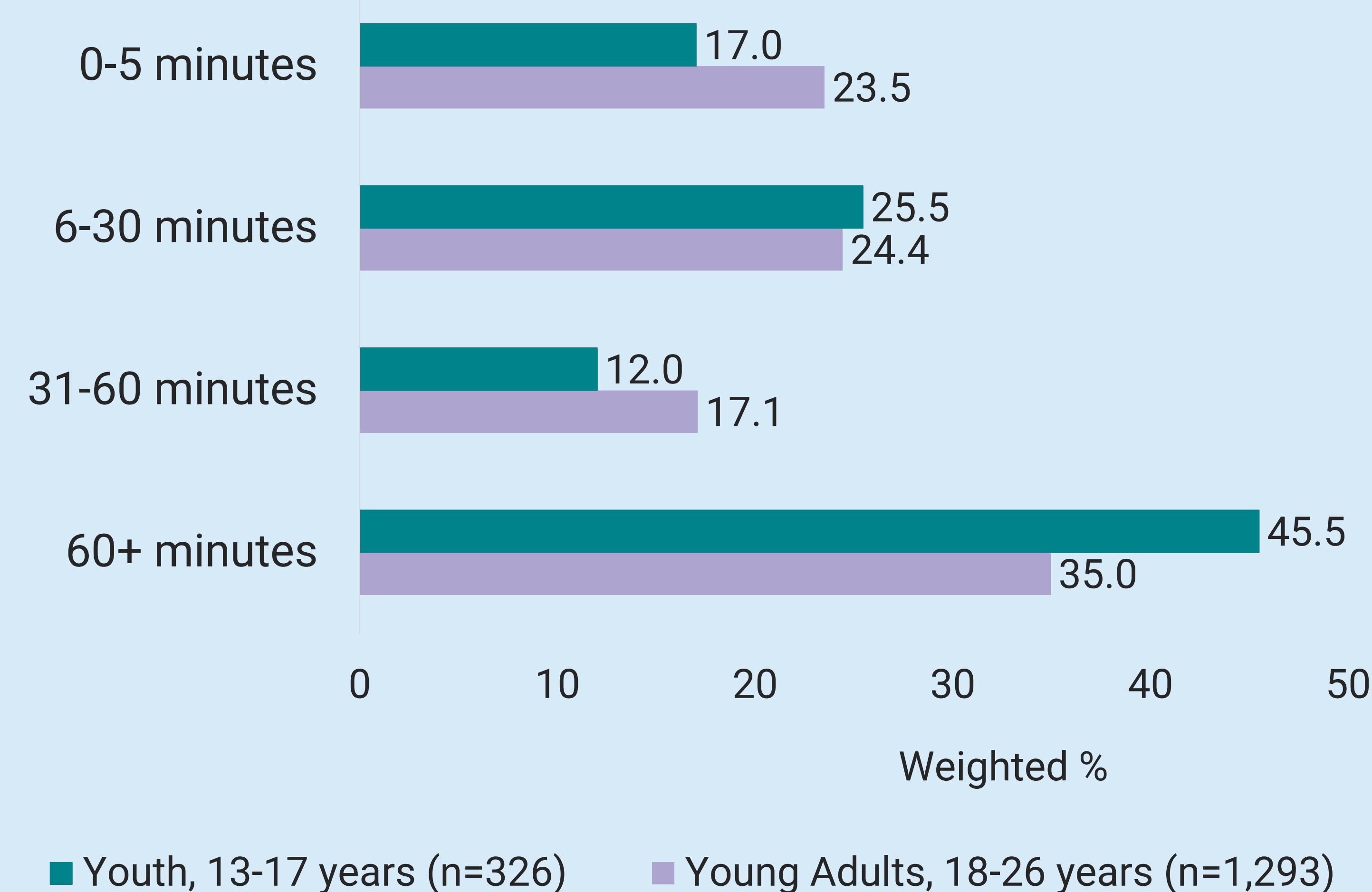
Youth, 13-17 years (n=331)    Young Adults, 18-26 years (n=1,305)



## Youth and young adults who used e-cigarettes did so with high intensity and frequency and showed evidence of nicotine dependence across several measures.

## Time to Want to Use an E-Cigarette After Waking

*"On the days that you use e-cigarettes/vape, how soon after you wake up do you want to use an e-cigarette?"*



## Methods Continued

### Analyses

- Wave 4 pseudo-cross-sectional weights were computed to reflect respondents' strata and selection probabilities and were adjusted according to census benchmarks. Weighted percentages were reported.
- All analyses were conducted in SAS 9.4 and SUDAAN 11.0.

## Results

- Among 10,233 youth and young adults, 15.5% reported past 30-day use of e-cigarettes (n=1,642), including 7.4% of youth (n=333) and 20.2% of young adults (n=1,309). More than one-third (36.4%) of youth and young adults who currently used e-cigarettes were less than 21 years of age.
- Of those who indicated past 30-day use:
  - 30.2% of youth and 51.9% of young adults reported frequent use (use on 20-30 days).
  - Approximately one-third of youth (36.0%) and half of young adults (48.3%) reported using their e-cigarette more than 10 times per day.
  - Nearly half of youth (42.5%) and young adults (47.9%) reported wanting to use an e-cigarette within 30 minutes of waking.
  - 41.9% of youth and 46.2% of young adults reported using large-format e-cigarettes containing 1,000 puffs or more. 26.0% of youth and 34.1% of young adults reported using an e-cigarette with approximately 5% nicotine.
- Using the 10-item Hooked on Nicotine Checklist (HONC)<sup>1</sup>, 64.6% of youth who reported past 30-day use of e-cigarettes showed evidence of diminished autonomy over their tobacco use (defined as a HONC score >=1).

## Conclusions

Youth and young adults who currently used e-cigarettes demonstrated heightened levels of nicotine dependence across several indicators. The availability of e-cigarettes with increased nicotine content and delivery may promote intensity of use and likelihood of dependence among young people.

## References

1. DiFranza, J.R., Savageau, J.A., Fletcher, K., Ockene, J.K., Rigotti, N.A., McNeill, A.D., Coleman, M., & Wood, C. (2002). Measuring the loss of autonomy over nicotine use in adolescents. *Archives of Pediatric and Adolescent Medicine*, 156, 397-403.