Measuring the Impact of Menthol and Tobacco-Flavored Vapor Product Use on Cigarette Smoking Cessation and Reductions

The Longitudinal Tobacco Use and Transitions Survey (LTTS)

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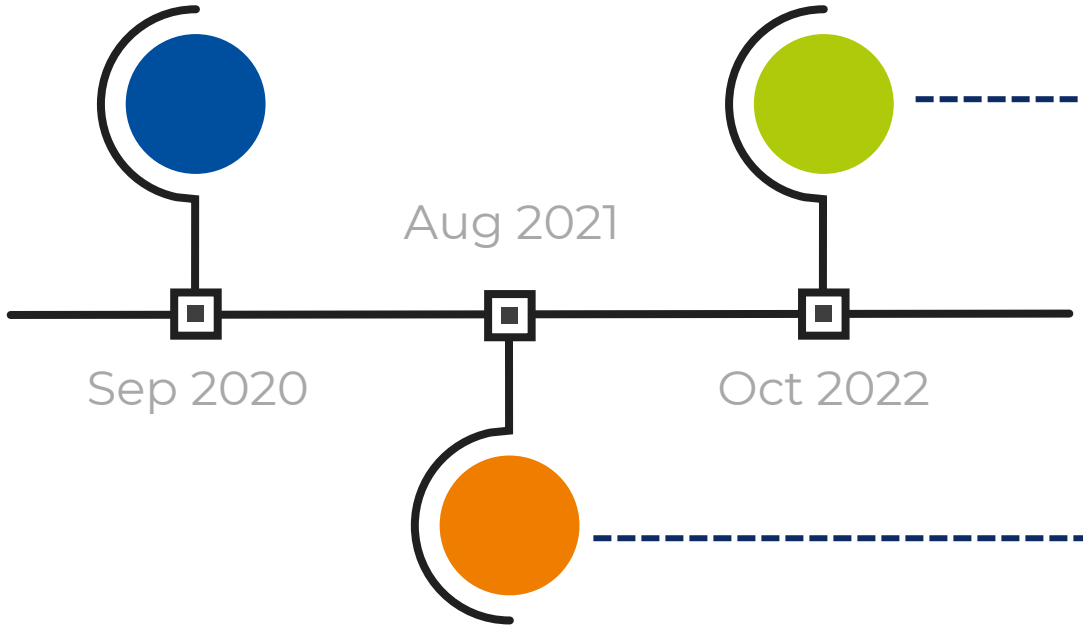
Disclosures

- The LTTS was sponsored by RAI Services Company
- Chris Junker is a full-time employee of RAI Services Company

Brief History of Flavored ENDS PMTAs

01 ENDS PMTA deadline

03 First MDOs for menthol



02 First MDOs for non-tobacco flavors

"The evidence provided within the application does not demonstrate that these menthol-flavored e-cigarettes are more effective in promoting complete switching or significant cigarette use reduction relative to tobacco-flavored e-cigarettes among adult smokers."

– October 26, 2022 CTP News Release

"Companies who want to continue to market their flavored ENDS products must have robust and reliable evidence showing that their products' potential benefit for adult smokers outweighs the significant known risk to youth."

– Former Director Zeller, Center for Tobacco Products
August 26, 2021 MDO Announcement

Emphasis added to quotations

Longitudinal Tobacco Use & Transitions Survey

1,483 Registered current Vuse users

Registered, age-verified users of Vuse products

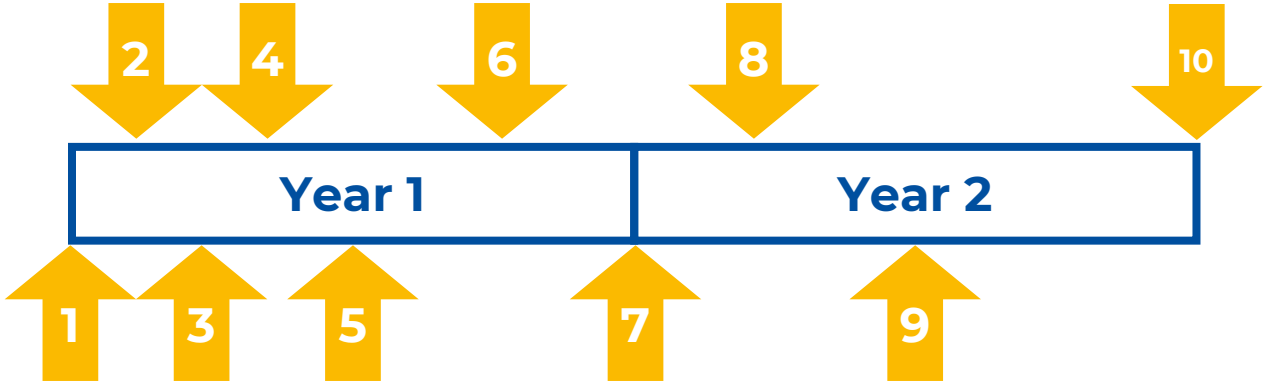
3rd party administered web-based survey; IRB approved; informed consent received

Past 30-day Vuse use at baseline; time of first use varies

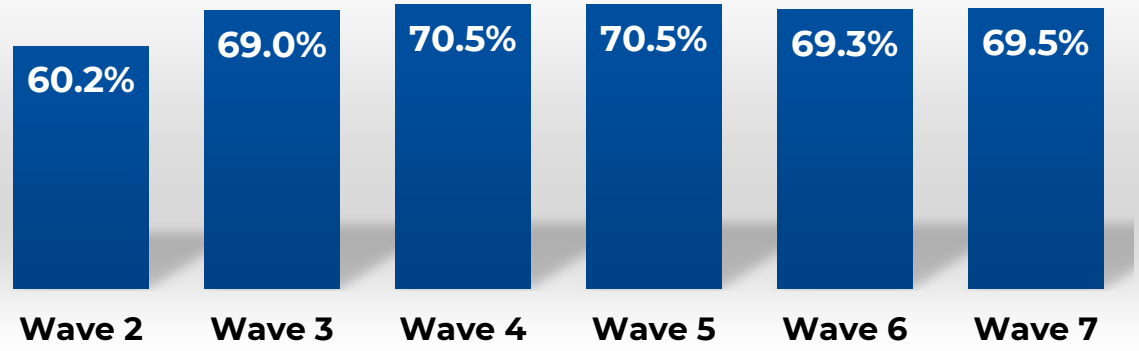
Longitudinal Tobacco Use & Transitions Survey

1,483 Registered current Vuse users

10 Waves of data through 24 months (survey ongoing)



Completion Rates (wave over wave)



Longitudinal Tobacco Use & Transitions Survey

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1,483 Registered current Vuse users

10 Waves of data through 24 months (ongoing)

5 Tobacco product categories captured

Cigarettes

Smokeless Tobacco

Oral Nicotine Products

Tobacco Heating Products

ENDS Products

Longitudinal Tobacco Use & Transitions Survey

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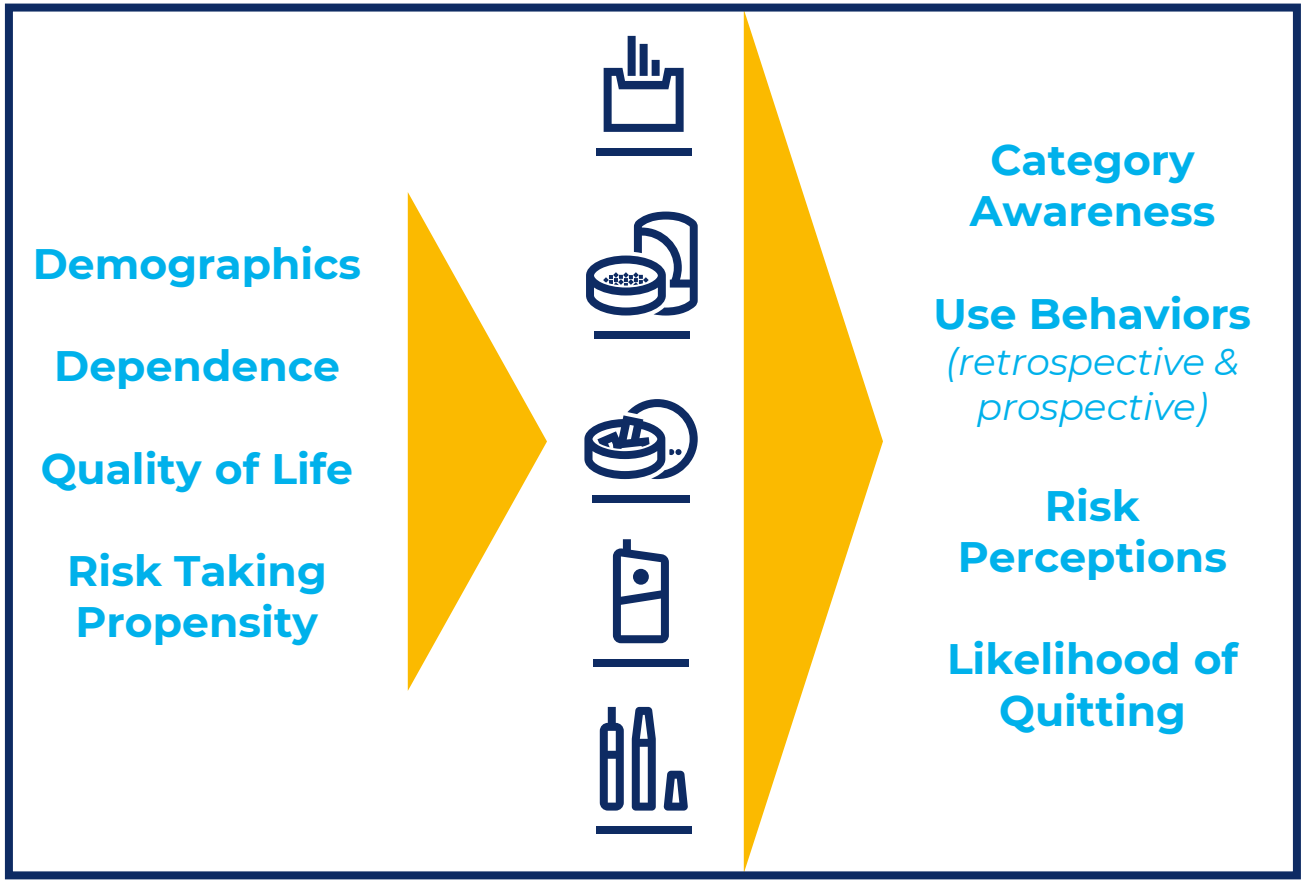
5 Tobacco product categories captured



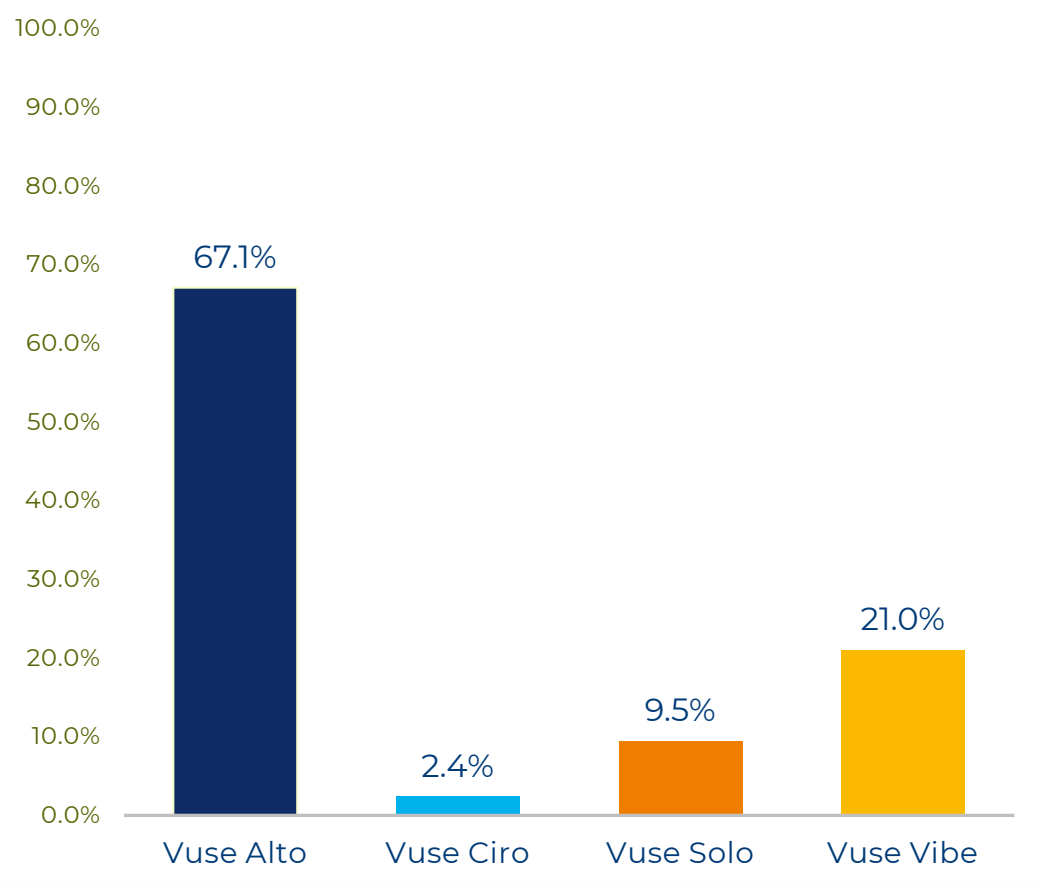
Baseline Demographic Characteristics

	Overall (%)	Vuse Menthol (%)	Vuse Tobacco (%)
Gender			
Male	54.8	50.7	60.7
Female	45.2	49.3	39.3
Age (years)			
21-29	22.4	29.5	11.8
30-39	31.4	32.4	29.9
40-49	23.0	20.6	26.6
50 and older	23.3	17.5	31.7
Race			
Non-Hispanic White	70.6	64.5	79.5
Non-Hispanic Black/African American	9.2	13.2	3.3
Others	20.2	22.3	17.1
Education			
High school graduate or less	41.4	43.0	38.9
Some college or more	58.6	57.0	61.1
Income			
Less than $50,000 USD	53.0	54.5	50.8
$50,000 USD to $74,999 USD	19.7	18.7	21.1
Greater than $74,999 USD	23.2	23.6	22.7
Do not know/Prefer not to answer	4.1	3.2	5.3

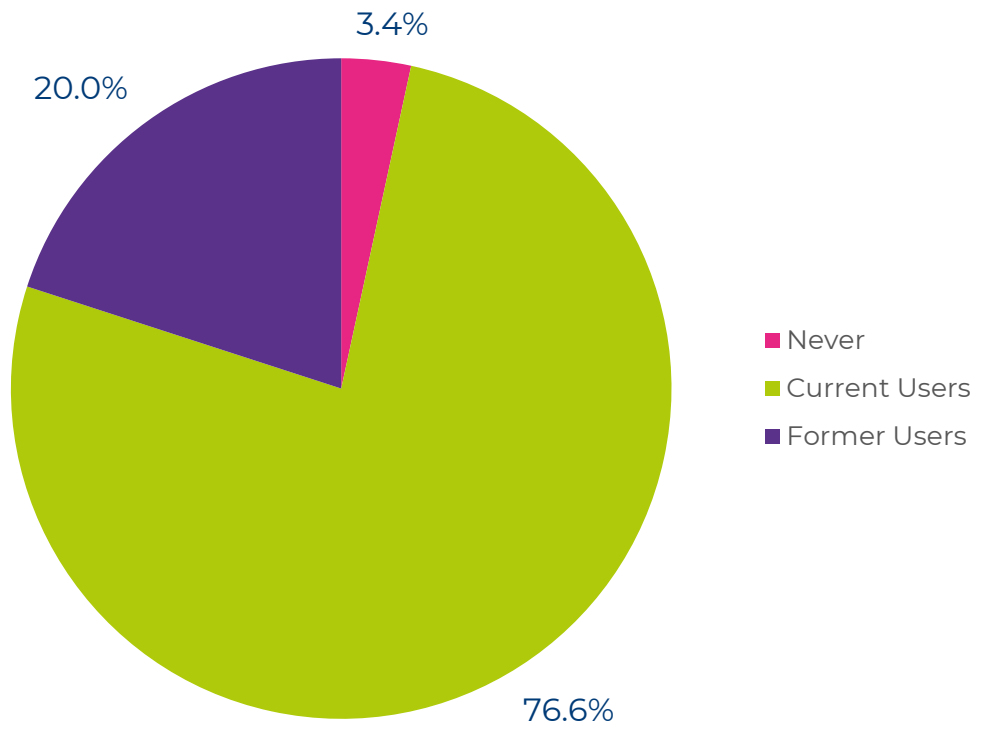
N=1,483
Weighted percentages may not add to 100 percent due to rounding.

Baseline Product Use Characteristics

Vuse Style Most Often Used



Other Tobacco & Nicotine Product Use



N=1,483
Weighted percentages may not add to 100 percent due to rounding.

Transitions in Product Use

Analytic Sample

- ✓ Current Vuse users at Wave 1
- ✓ Current or Former smokers at Wave 1
- ✓ Smoking initiated >1 year prior to Vuse
- ✓ Current smoker at year of Vuse initiation

= **697** (Wave 1)
485 (Wave 7)

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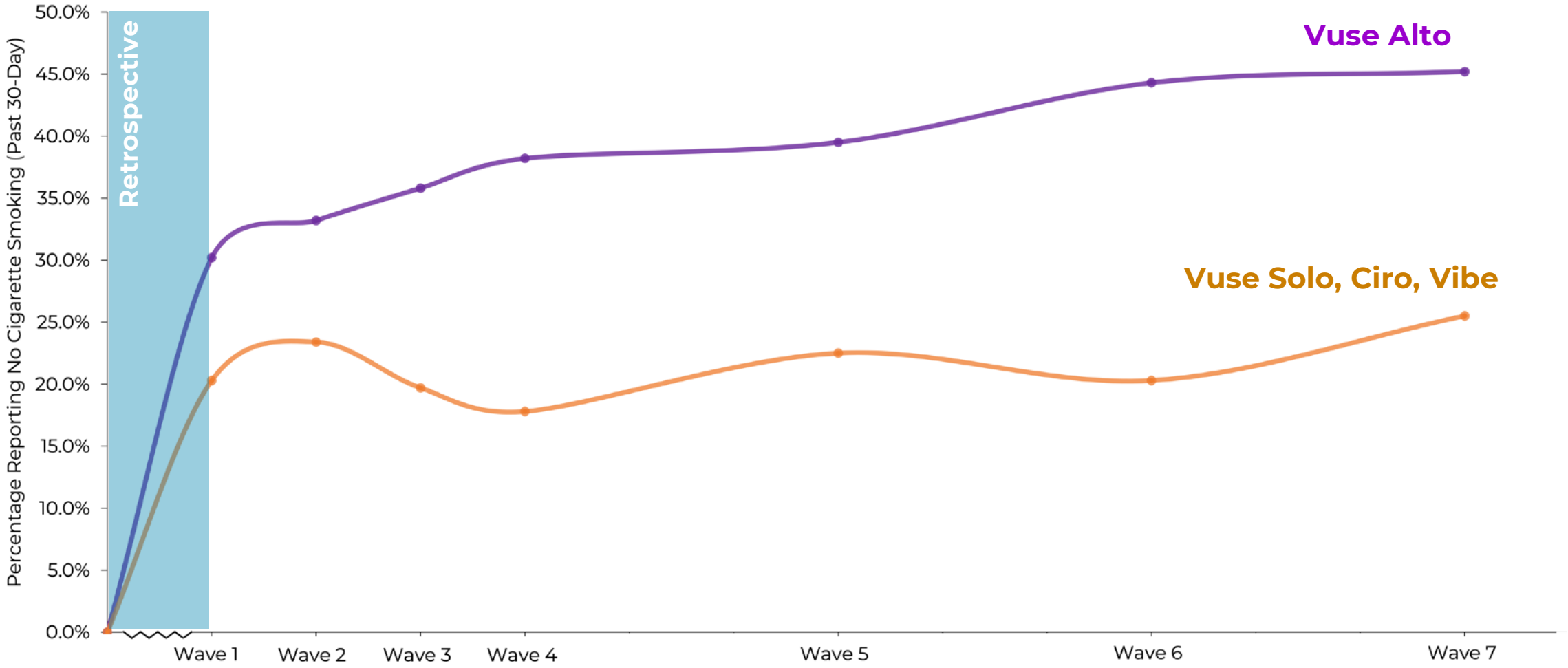
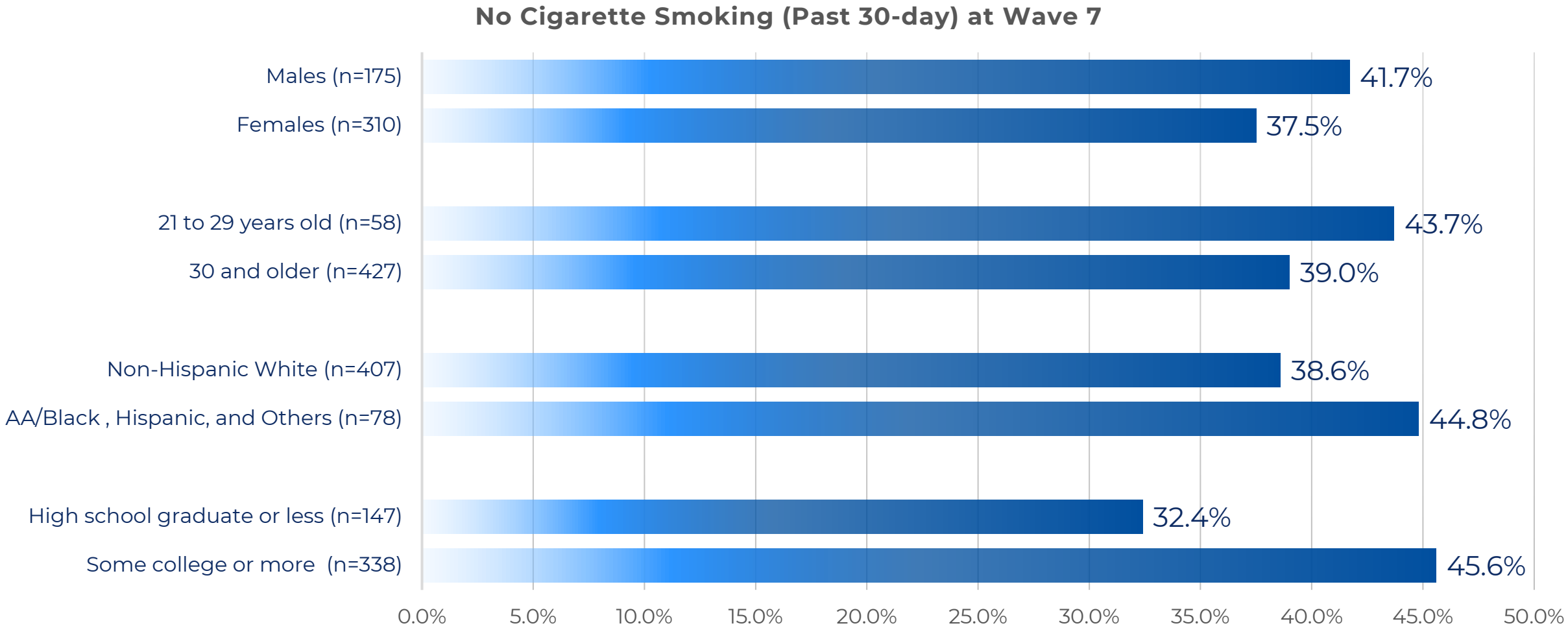
Complete Switching Over Time



Cessation rates at each wave: Wave 1 - 193 of 697; Wave 2 - 134 of 427; Wave 3 - 160 of 490; Wave 4 - 172 of 504; Wave 5 - 175 of 500; Wave 6 - 187 of 496; Wave 7 - 192 of 485.

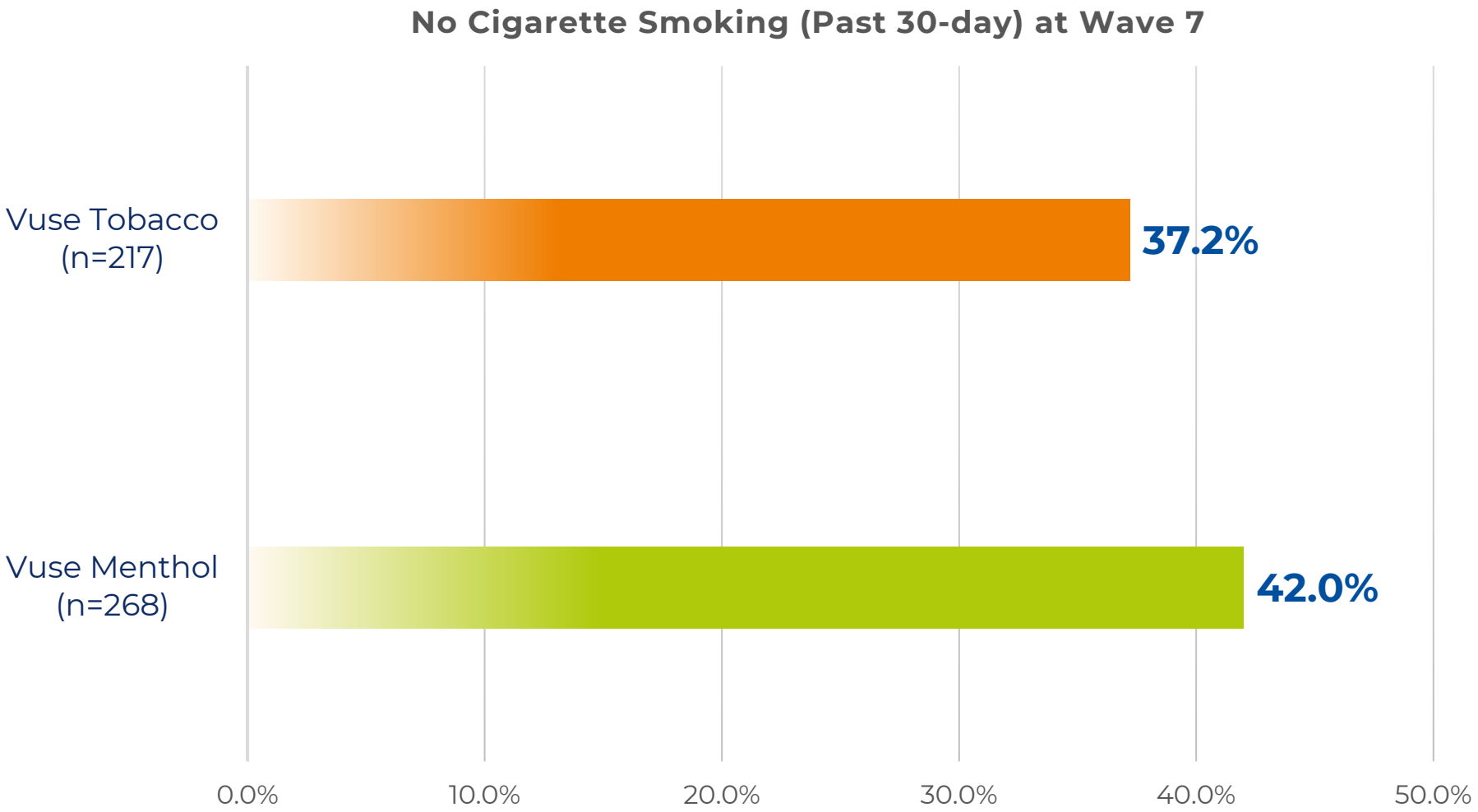
Complete Switching
Subpopulations of Interest



N=485

Complete Switching

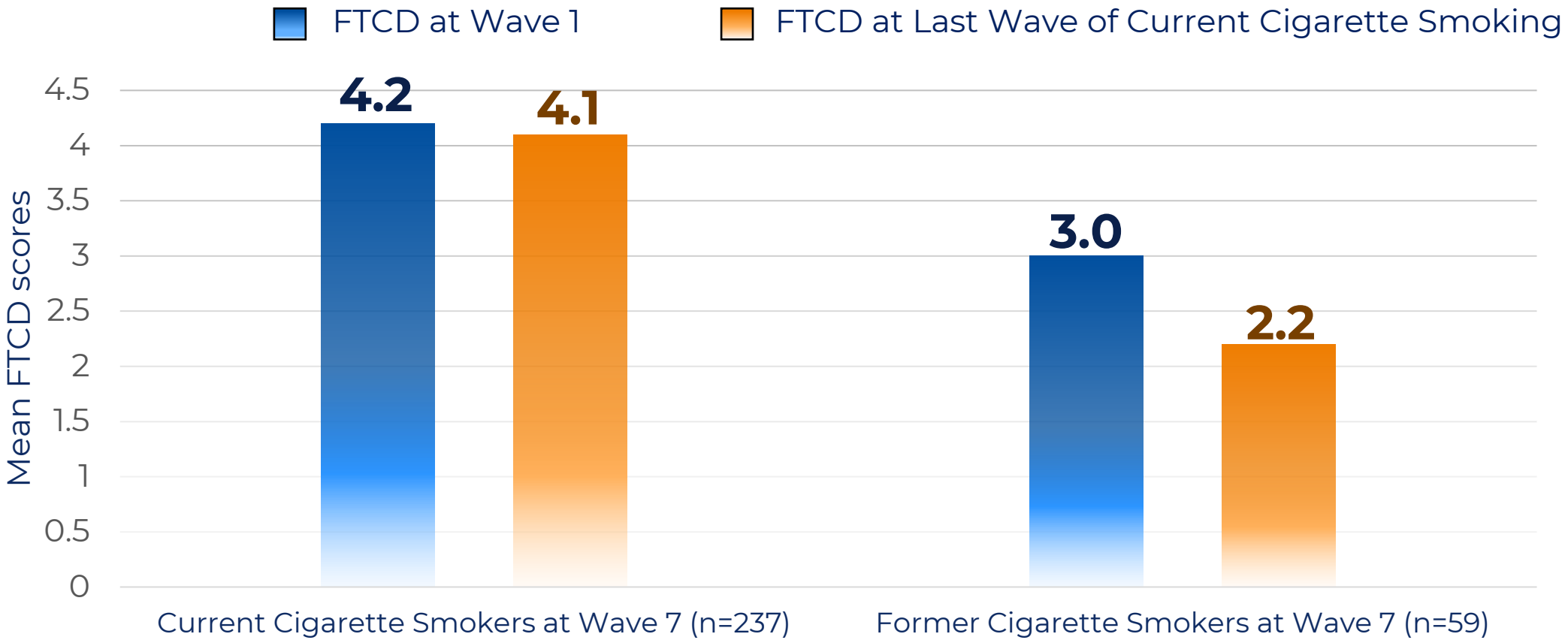
Difference by Vuse Flavor Most Often Used



N=485

Change in Cigarette Dependence

Among Current and Former Cigarette Smokers at Wave 7



Subsample: Current established cigarette smokers at Wave 1; N=296
FTCD = Fagerström Test for Cigarette Dependence

Cigarette Reductions

Analytic Sample

- ✓ Current Vuse users at Wave 1
- ✓ Current or Former smokers at Wave 1
- ✓ Smoking initiated >1 year prior to Vuse
- ✓ Current smoker at year of Vuse initiation

= **697** (Wave 1)
485 (Wave 7)

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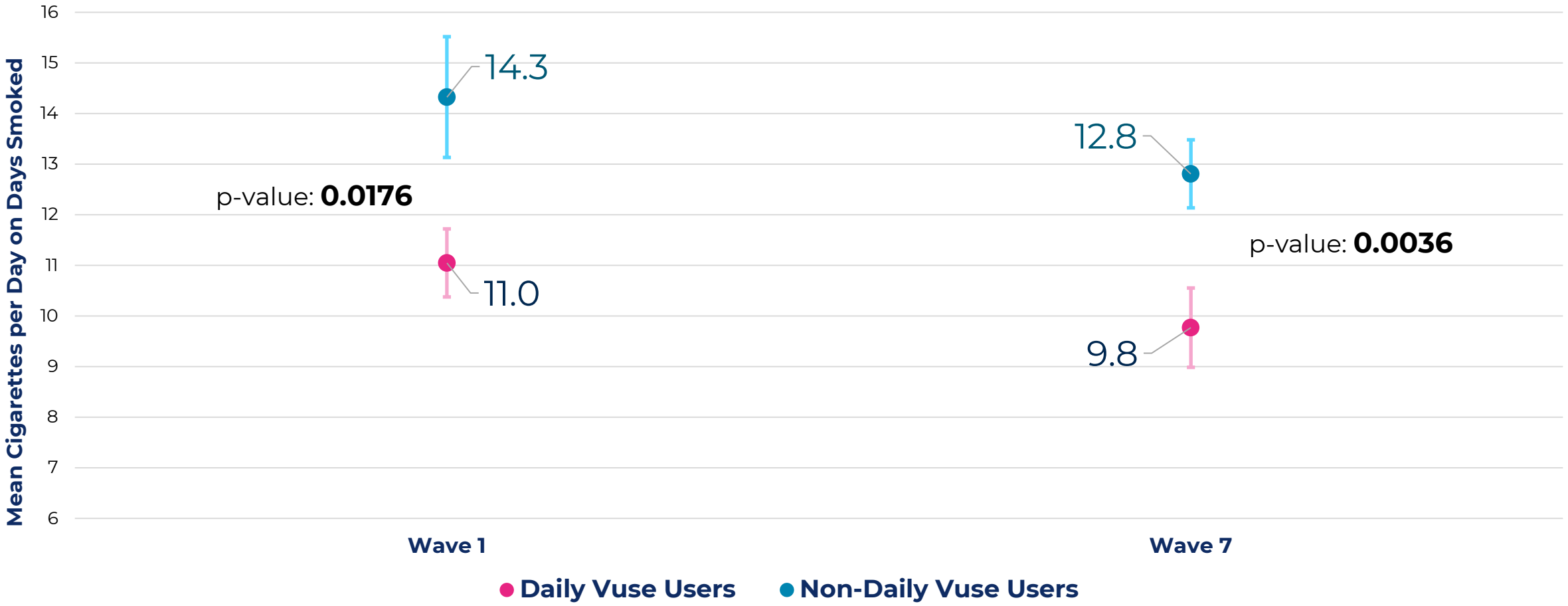
Changes in Cigarette Consumption

Between Daily and Non-Daily Vuse Users



Subsample: Current established cigarette smokers and Vuse users at both Wave 1 and Wave 7; N=237
Wave 1 Vuse Use (daily n=105, non-daily n=132); Wave 7 Vuse Use (daily n=85, non-daily n=152).

Changes in Cigarette Consumption

Difference by Vuse Flavor Most Often Used

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Vuse Menthol (n=143)		
2-year Reduction **-5.5 CPD** p-value: <0.0001		
1 year prior to Wave 1	Wave 1	Wave 7
17.0 (14.2) CPD	13.0 (12.2) CPD	11.6 (8.3) CPD

Vuse Tobacco (n=115)		
2-year Reduction **-2.7 CPD** p-value: 0.0437		
1 year prior to Wave 1	Wave 1	Wave 7
15.3 (14.2) CPD	12.7 (8.2) CPD	12.6 (7.1) CPD

Subsample: Current established cigarette smokers at 1 year prior to Wave 1, Wave 1, and Wave 7; N=258
CPD values shown as Mean (SD)

Changes in Cigarette Consumption

Differences by Risk Perceptions

Relative Risk of Vuse vs. Cigarettes	CPD at W1	CPD at W7	Difference	p-value
Less harmful (n=162)	14.0 (12.1)	11.5 (8.2)	**-2.5** CPD	**0.0339**
Equally harmful (n=95)	12.4 (7.7)	12.4 (7.2)	**0.0** CPD	0.9791
More harmful (n=6)	7.0 (4.6)	6.5 (2.9)	**-0.5** CPD	NR
Don't know (n=14)	7.5 (4.9)	11.8 (6.1)	**4.2** CPD	NR

Subsample: Current established cigarette smokers at Wave 1 and Wave 7; N=277
CPD values shown as Mean (SD); NR = Not Reported due to small sample size

01 Strengths

- Product-specific longitudinal data
- Naturalistic setting
- Assessed Vuse as well as other tobacco and nicotine products

02 Limitations

- Self-reported data
- Variance in length of product use at baseline
- Selection bias (participants & products)
- Sample size

03 Conclusions

- Among adult smokers using Vuse Alto, rates of complete switching exceeded 40% at twelve months
- Vuse menthol products resulted in (1) directionally higher rates of complete switching and (2) lower CPD amongst continued smokers at twelve months versus Vuse tobacco flavors
- Lower CPD were also observed with (1) daily Vuse use and (2) correct relative risk perceptions of Vuse versus cigarettes

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