

# E-vapor Product Appeal Among Tobacco Users and Non-users and the Role of Flavor in Tobacco Harm Reduction

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# Tobacco Harm Reduction at Altria



**Continuum of Risk**



**Combusted Tobacco Products**

**Non-combusted Tobacco Products**

**MOST  
HARMFUL**

**LEAST  
HARMFUL**



**Altria**

July 28, 2017: Protecting American Families: Comprehensive Approach to Nicotine and Tobacco  
<https://www.fda.gov/NewsEvents/Speeches/ucm569024.htm>

Altria Client Services | Consumer Insights & Engagement | TSRC | 09/18/2018 | Final | 2

# Harm Reduction Opportunities



\*Source: 18+ATCT 12MM ending December 2017  
Numbers may not foot due to rounding



# Tobacco Harm Reduction Product Platforms

## E-Vapor



## Oral Tobacco/ Nicotine Products



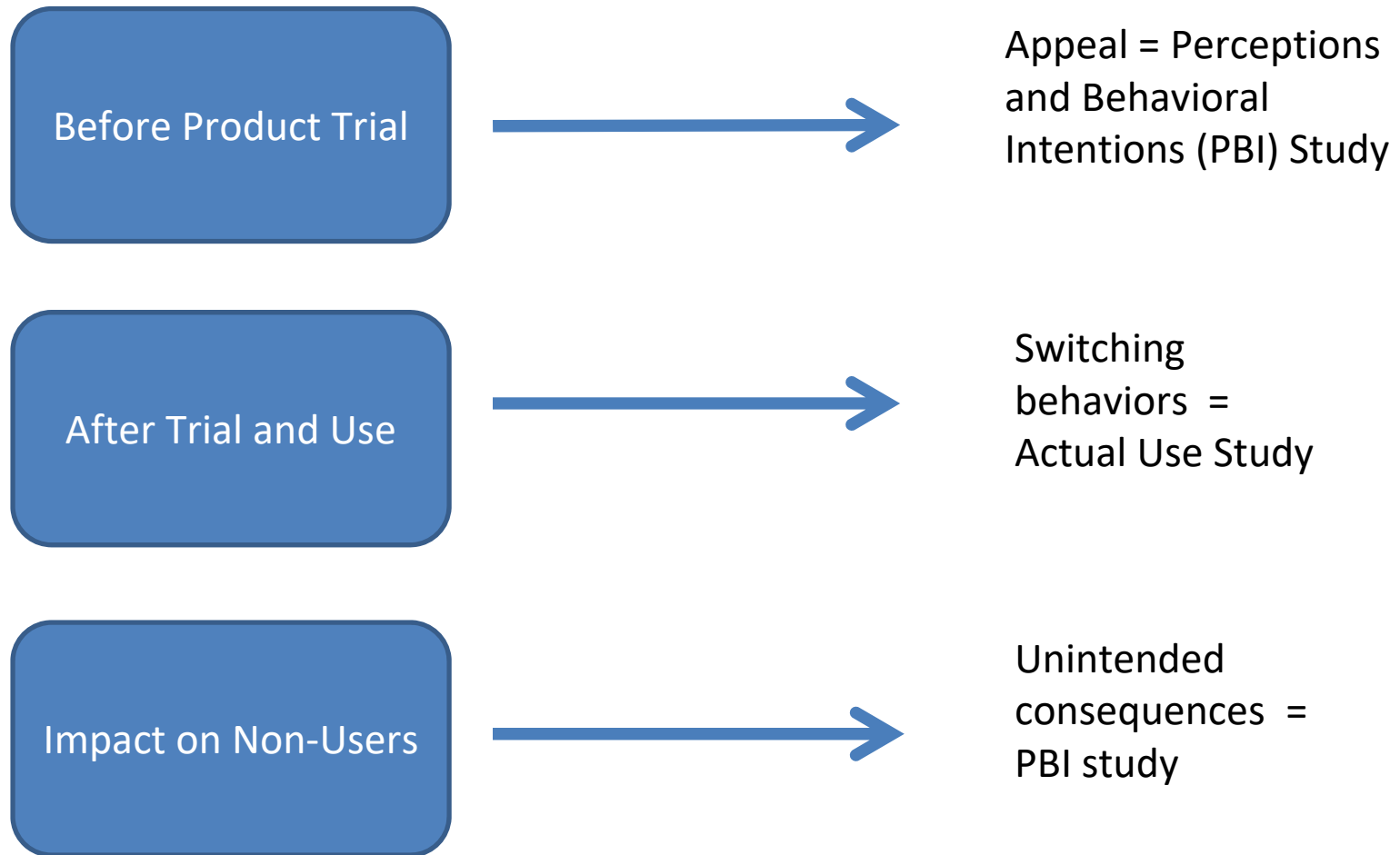
## Heated Tobacco Products



# MarkTen® E-Vapor Products Portfolio



# Role of Flavors in Tobacco Harm Reduction



# The Role of Appeal in Flavor Selection Before Trial

## Research Question:

What role, if any, do flavor options play in appeal of ENDS products among tobacco users and non-users?

- ❑ We conducted a quasi-experimental online survey (perceptions and behavioral intentions study) with 4,210 adult tobacco users and non-users
- ❑ We assessed product appeal of 14 flavor varieties and characterized use intentions among non-users who selected a MarkTen® (M10) e-vapor use product as appealing



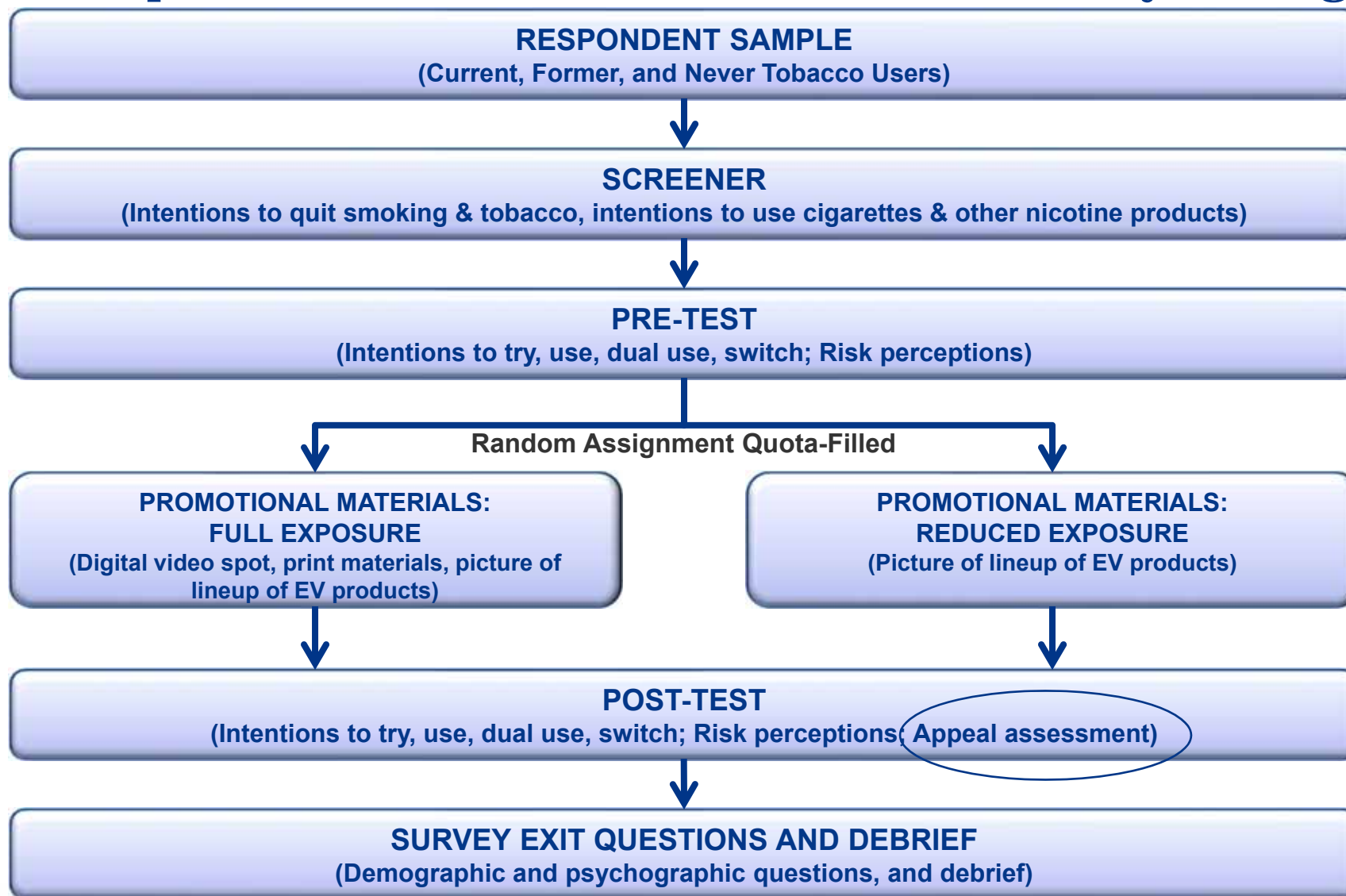
# Perceptions and Behavioral Intentions Study: Methodology

- **Quantitative, online study (02/23/17 – 04/24/17)**
  
- **4,210 adult users and nonusers**
  1. Cigarette Smokers (planning to quit; n=841)
  2. Cigarette Smokers (not planning to quit; n=847)
  3. E-vapor Users (n=841)
    - Dual Users (smoke cigarettes and use e-vapor/e-cigarettes; n=622) & Exclusive e-vapor users (n=219)
    - Closed system users (n=260) & Open system users (n=337)
    - Users of both closed and open systems (n=244)
  4. Former tobacco users (n=841)
  5. Never tobacco users (n=840)
  
- **Special Population: Legal Age to 24 year olds**
  - Users (includes Cigarette Smokers and E-vapor Users; n=843)
  - Non-Users (includes Former and Never Users; n=838)

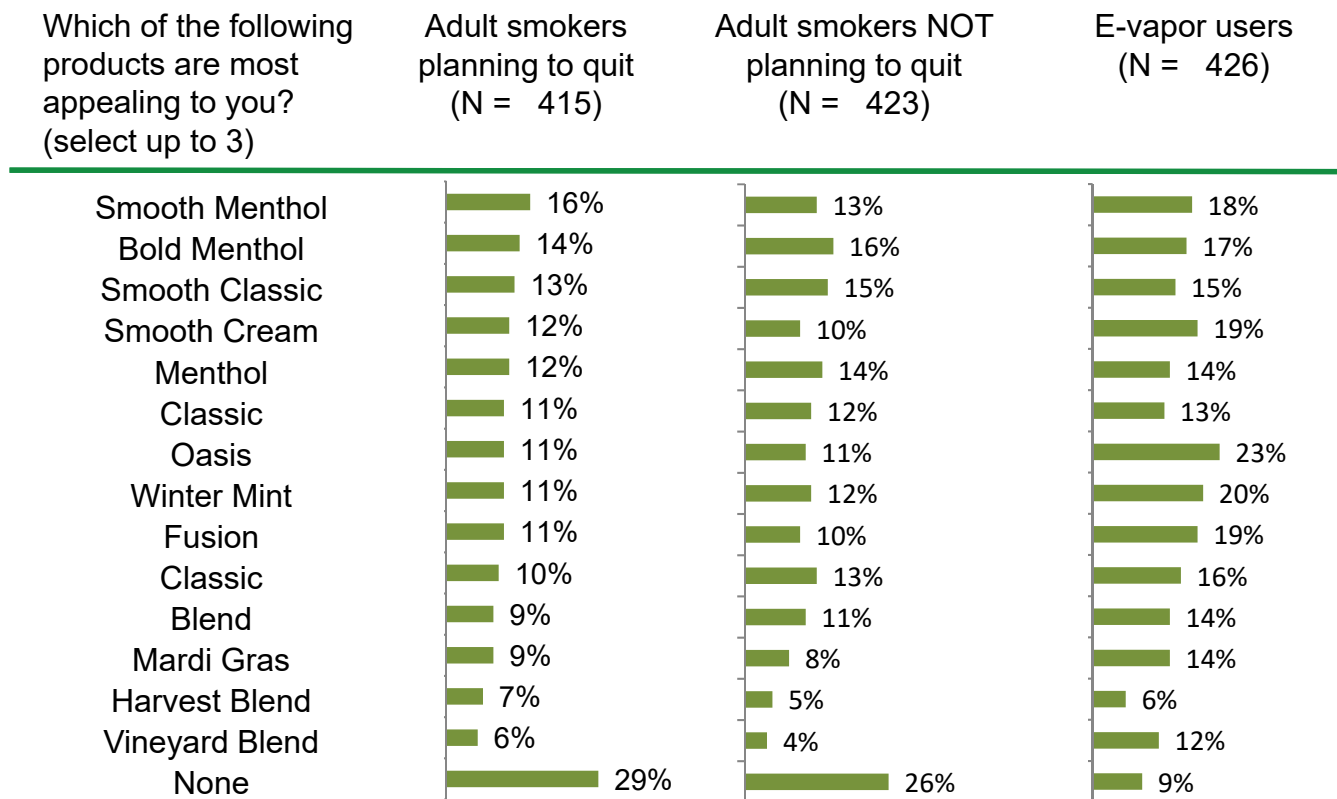




# Perceptions and Behavioral Intentions Study: Design



# Flavor Portfolio Maximizes Appeal of MarkTen® Products Among Adult Smokers and Vapers

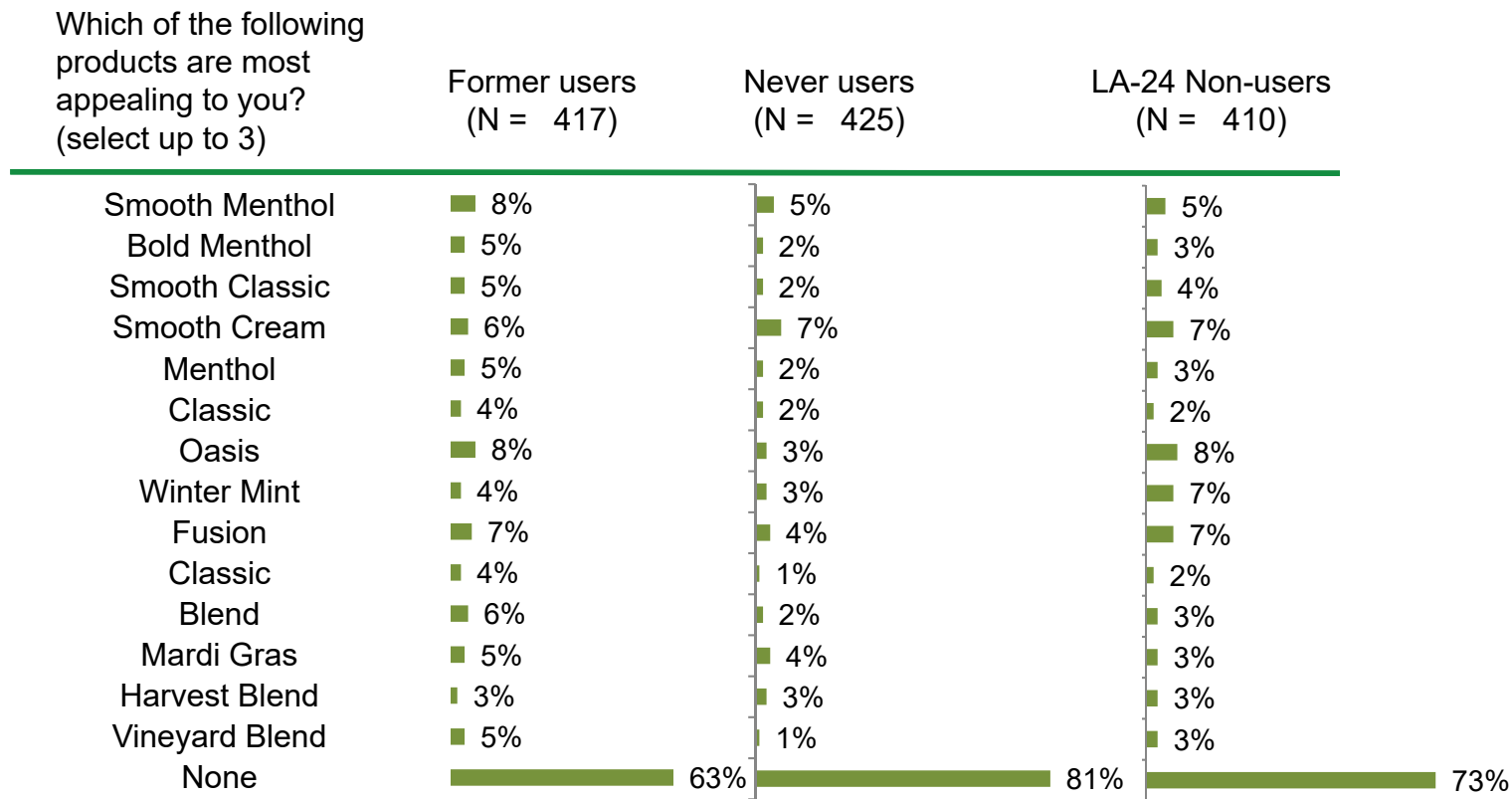


No statistical significance testing  
 Not all participants rated a product as appealing

Source: Perceptions and Behavioral Intentions Study for Products Currently Marketed as MarkTen® E-vapor (ALCS-CMI-16-13-EV)



# Adult Non-tobacco Users Do Not Find MarkTen® Flavors Appealing



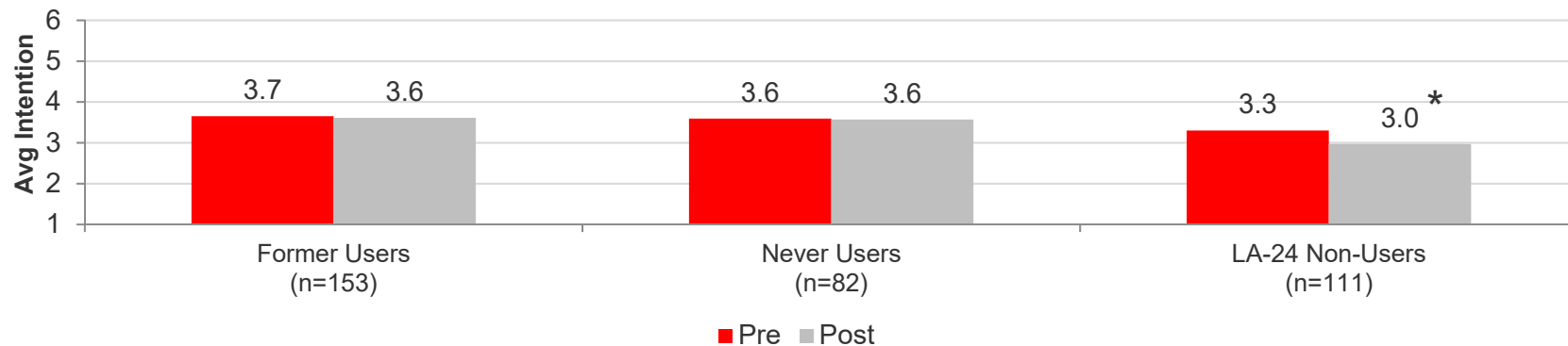
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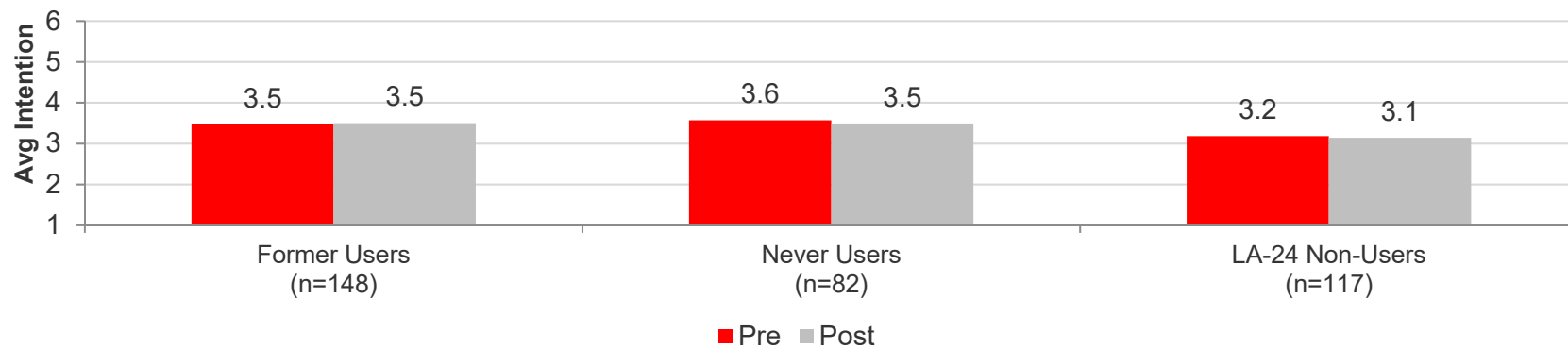


# No Impact of Appeal on Intentions to Use

## Full Exposure



## Reduced Exposure



\* Indicates a stat. sig. diff. between pre and post



# ENDS Flavors Play a Critical Role in Harm Reduction

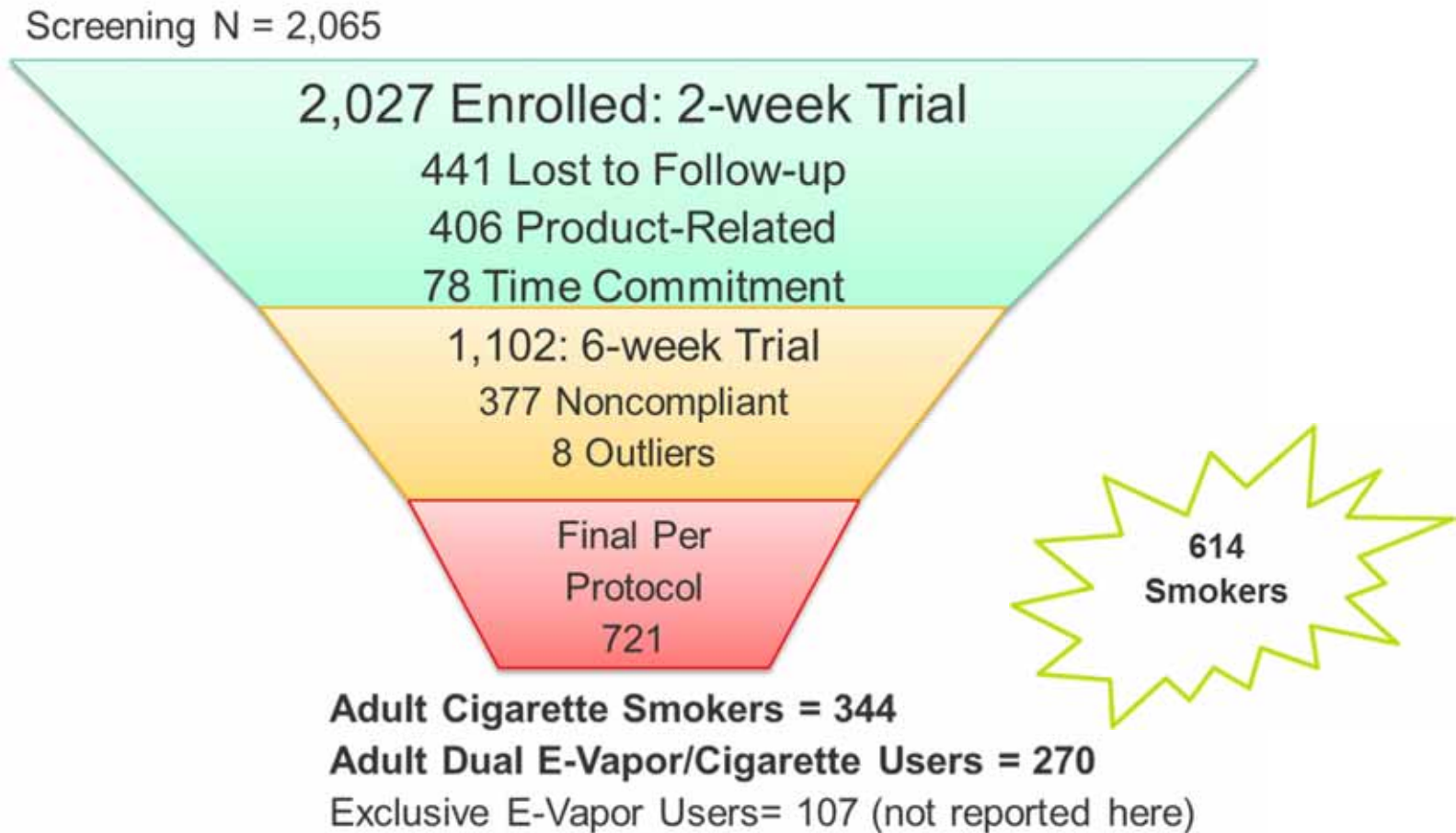
## Research Question:

What role, if any, do flavor options play in switching behavior associated with ENDS?

- ❑ We conducted an 8-week, 2-phase, actual use study with 614 adult cigarette smokers not planning to quit
- ❑ We characterized MarkTen<sup>®</sup> (M10) e-vapor use behavior and its influence on other tobacco use behavior
- ❑ We examined the potential role of flavor variety (14 flavors) on behavioral outcomes



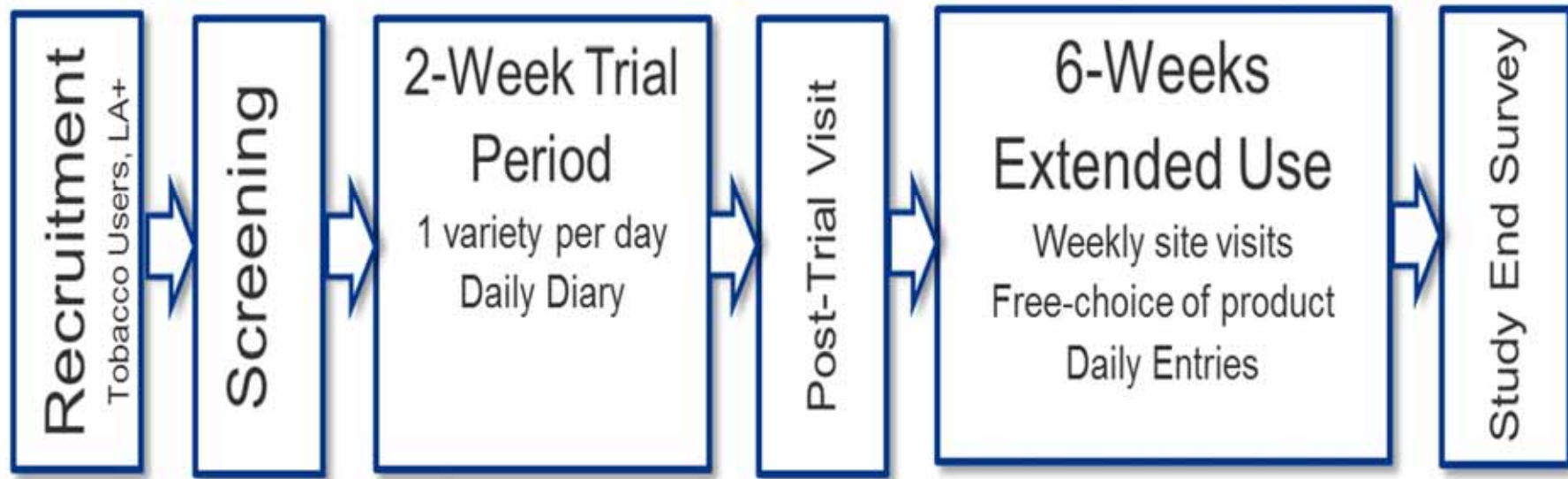
# Actual Use Study: Sample Disposition & Methods



Lost to follow up: Did not return, even after re-contact  
Product-related: Did not use during trial or did not score  $\geq 4$  on intentions to use  
Noncompliant: Missed 5 or more daily surveys in a row or missed > 2 Day 7 surveys

# Actual Use Study: Overview

## Study Overview



- $\geq 3$  Intentions to Try
- No plans to quit smoking in next 3 months

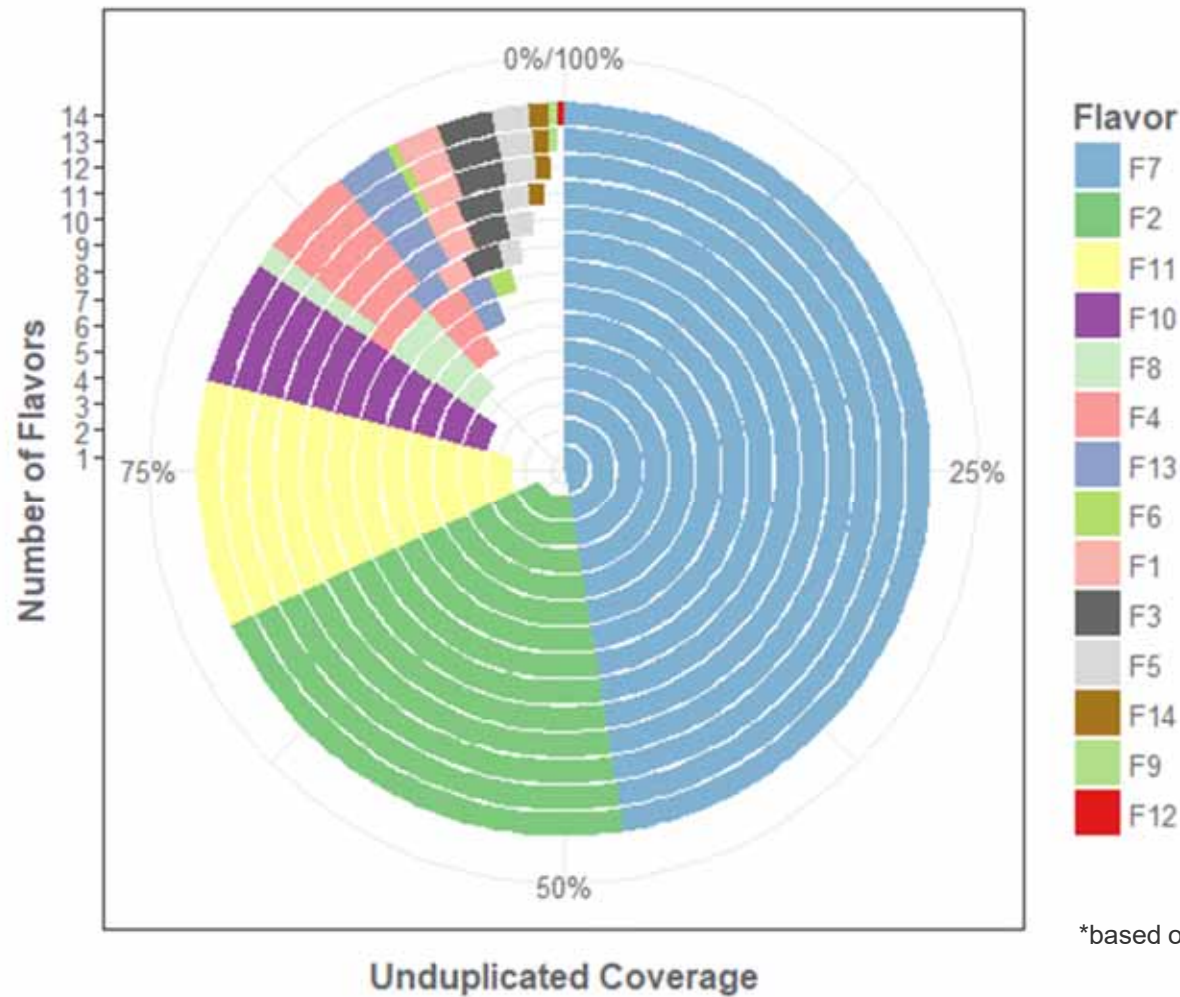
$\geq 4$  Intentions to Use



# 14 Flavors Were Needed to Meet Preferences\* During Trial

## Total Unduplicated Reach and Frequency Analysis (TURF)

Top Liking Rating (7-point) during Phase 1



\*based on highest rating of liking



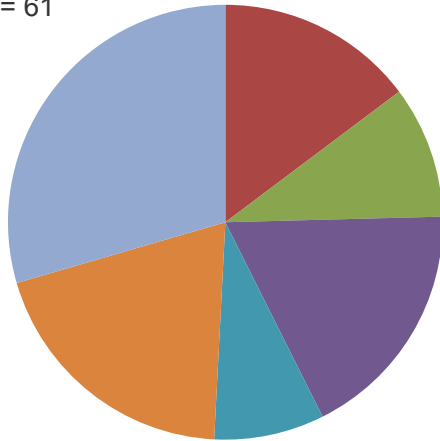


# Participants that Switched Completely Used More Flavors

## Number of Flavors Used by Behavioral Outcome

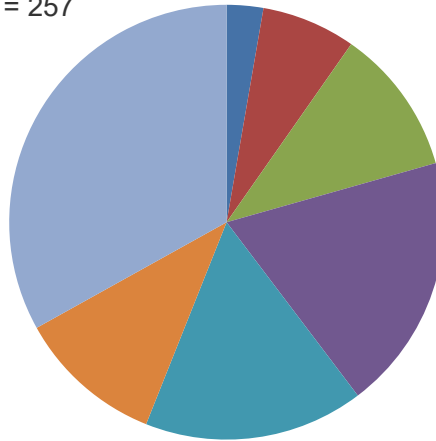
**Smoked Same # Cigarettes**

N = 61



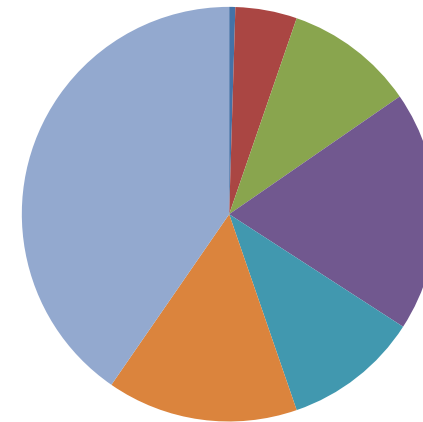
**Decreased<sup>a</sup> Cigarettes**

N = 257



**Switched<sup>b</sup> from Cigarettes to MarkTen**

N = 208



- 1 variety
- 2
- 3
- 4
- 5
- 6
- 7 or more

	Same	Decrease	Switched
Mean #Varieties	5.48	5.92	6.42
S.D.	2.62	2.97	3.07

a: Decreased by 20% or greater by week 6 (Phase 2)

b: No cigarettes during week 6 (Phase 2) and still using MarkTen<sup>®</sup>



# Overall Conclusions

- ENDS products present an opportunity to reduce the harm from cigarette smoking
  - Flavor portfolio maximizes appeal of MarkTen<sup>®</sup> products among adult smokers and vapers
  - Adult non-users do not find MarkTen<sup>®</sup> flavors appealing
  - A wide variety of flavor options is necessary to capture all adult smokers' preferences
  - Access to a variety of flavor options appears to play a role in adult cigarette smokers' switching behavior and smoking reduction



For additional  
information visit our  
science website at  
[Altria.com/ALCS-  
Science](http://Altria.com/ALCS-Science).



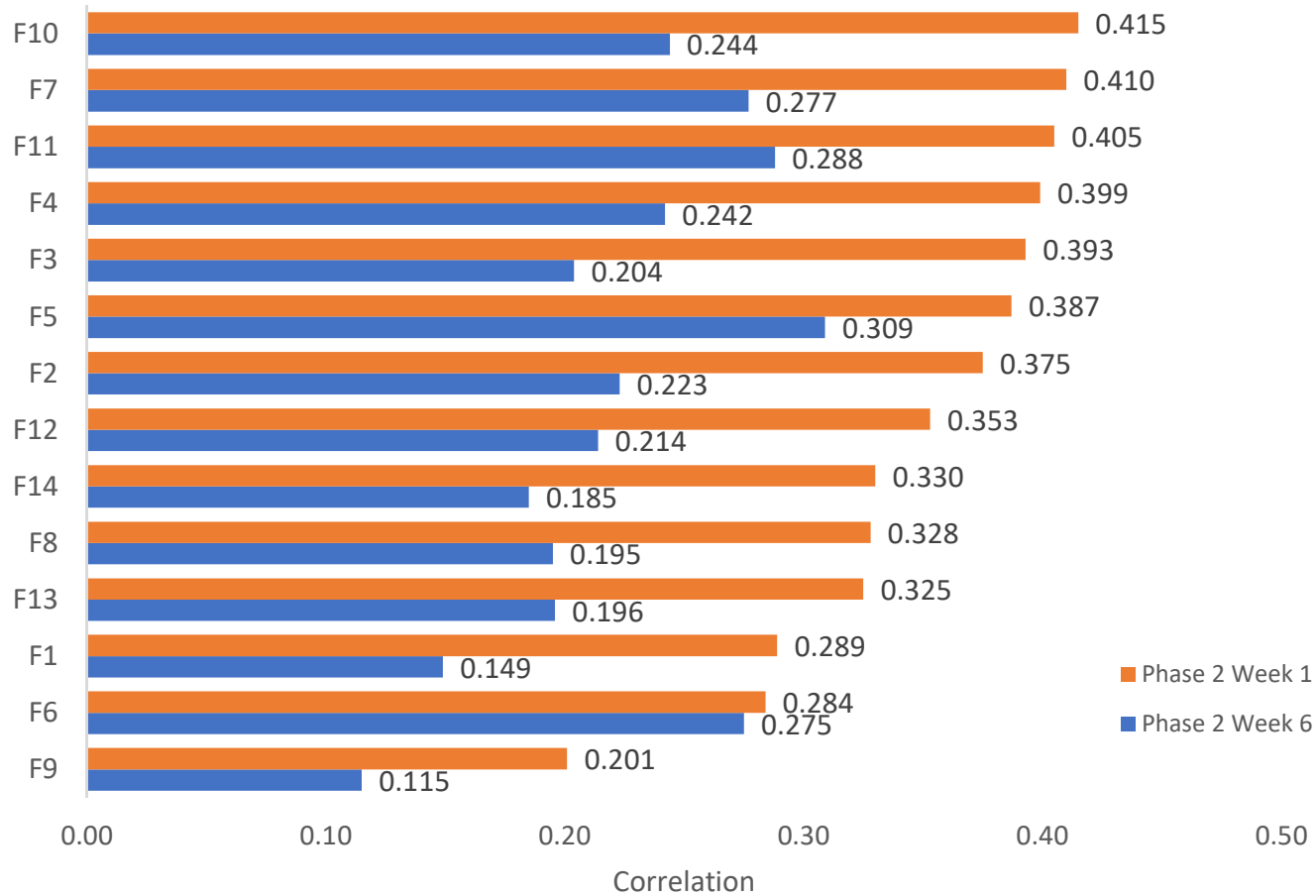
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# BACKUP



# Flavor Preferences Changed over Time

Correlations\* Between Phase 1 Liking and Phase 2 Week 1 and Week 6 Use Occasions by Variety



\*All correlations are significant at the 0.01 level (2-tailed)



# Participants Reduced Cigarette Smoking Behavior

**Distribution of Change in Cigarette Use Per Week (Total Sample)**

