

# Promotional Materials for a Novel Heated Tobacco Capsule System Increase Behavioral Intentions to Try and Use in Adult Smokers But Not In Nonusers, and Do Not Impede Quit Intentions

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Tobacco Science Research Conference  
September 25-27, 2022

## Introduction

The growing consensus among public health authorities is that tobacco products exist on a continuum of risk. The use of combustible tobacco products, such as conventional cigarettes, carries the highest level of risk, while the use of noncombustible tobacco products, such as heated tobacco products (HTP), is associated with lower risks.<sup>1,2</sup> HTPs may offer a reduced-risk alternative to adults 21+ who smoke cigarettes and are unable or unwilling to quit. To demonstrate that a novel HTP is appropriate for the protection of public health, FDA requires information about the effects of the product on perceptions, appeal, intentions, and behaviors among intended and unintended audiences, as well as the likelihood of tobacco use initiation by nonusers. We conducted an online quantitative experimental study evaluating the effects of promotional materials on behavioral intentions and risk perceptions for a novel heated tobacco capsule system (HTC) among adults who use and do not use tobacco.

## Methods

### Study Objective:

Assess and evaluate the effect of novel HTC promotional materials (Test vs. Control) on tobacco use behavioral intentions (i.e., intention to try, use, dual use, switch, quit smoking, quit tobacco).

### Participants:

The study enrolled 4,511 U.S. adult tobacco users and nonusers, oversampled for ages 21-24 and included a separate cohort of underage (to purchase tobacco products) adults ages 18-20. Participants were recruited from a probability-based consumer panel via email invitation, online advertisements, and via in-person intercept, with demographic quotas based on the 2020 National Health Interview Study (NHIS) for gender, age, race/ethnicity, education, and US region (Northeast, Midwest, South, West).

### Demographics

Notes:  
Only select subgroups from the overall study are presented here.

Age 21-24 and Age 18-20 Tobacco User groups include those who smoke cigarettes, as well as those who use other tobacco products. Nonuser groups include both former and never tobacco users.

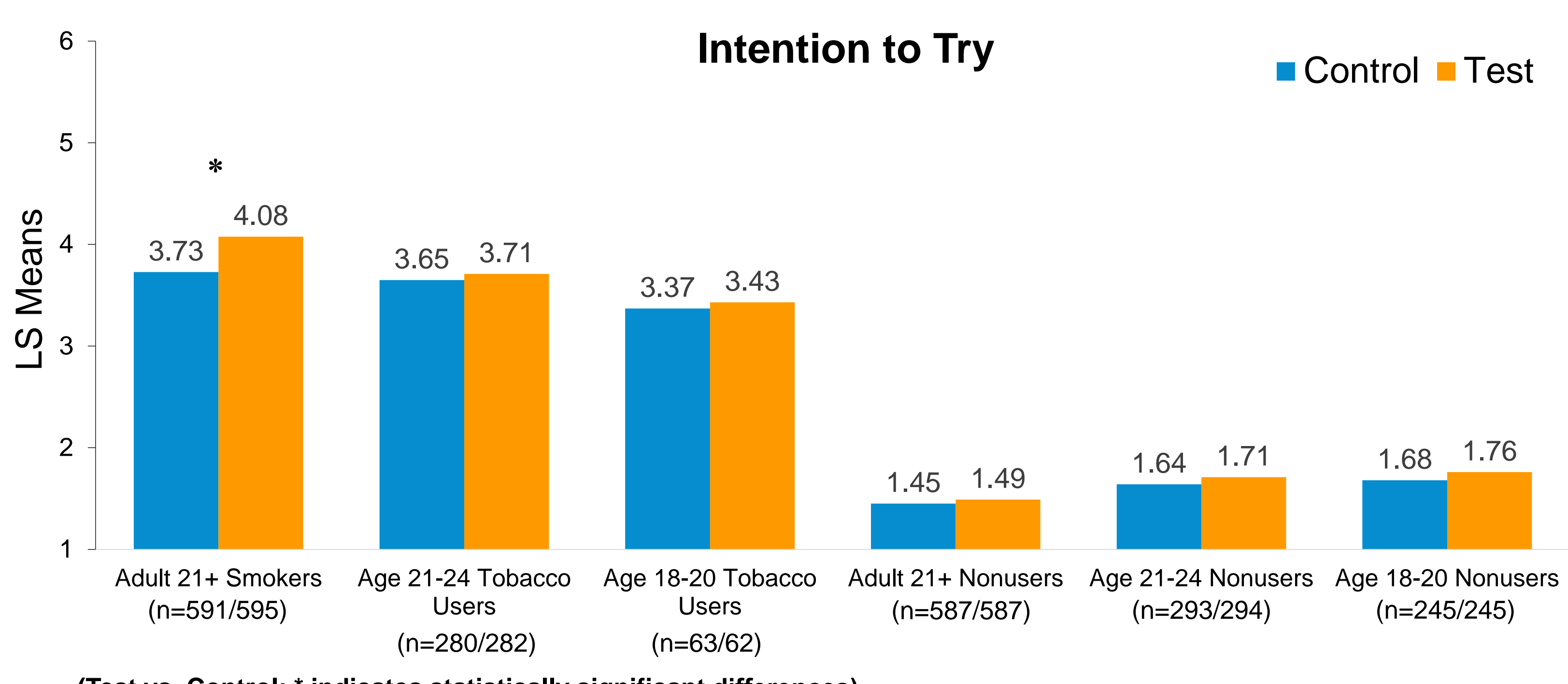
### Study Design:

Participants were randomized to one of two study conditions:

- **Control (n=2253)** viewed the HTC product concept only
- **Test (n=2258)** viewed the HTC product concept as well as a suite of promotional materials (ads, website banners, direct mail, product line-up, and packaging)

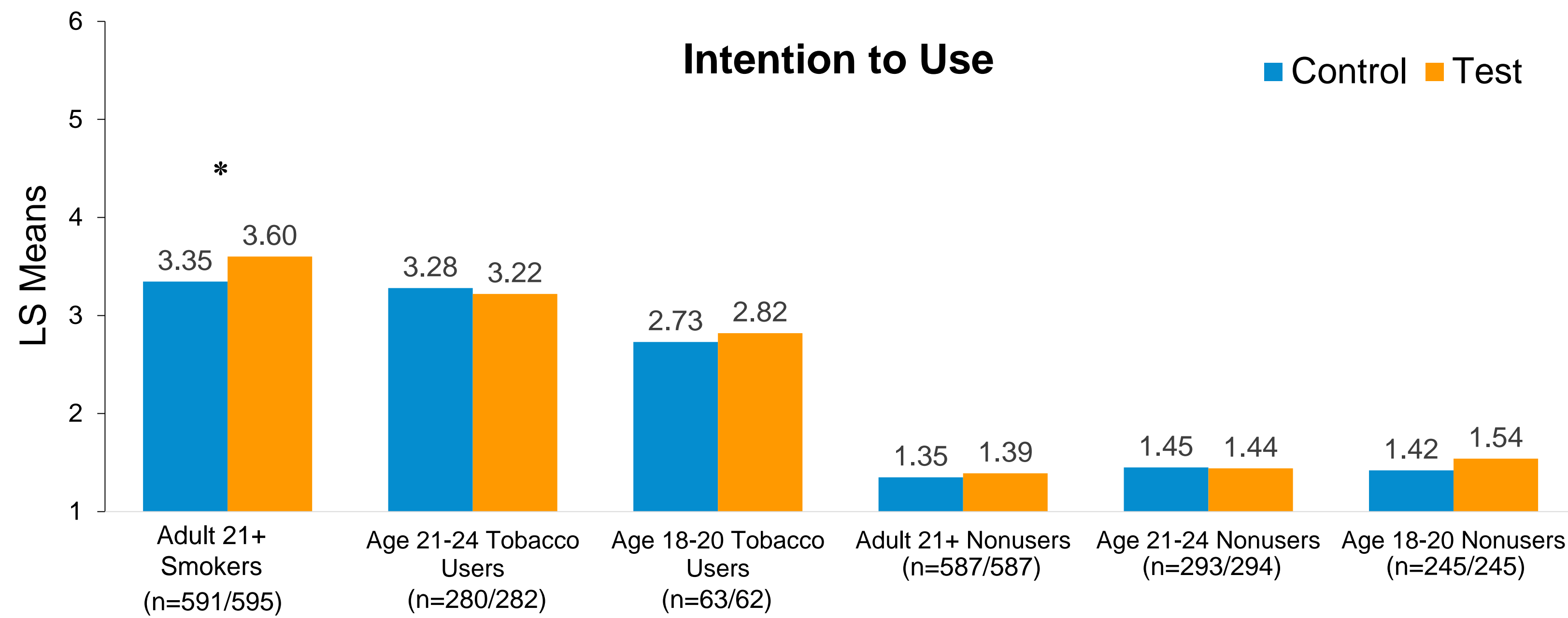
The study instrument contained questions about socio-demographics and prior and current tobacco use behavior, followed by the presentation of study stimuli and post-exposure questions, described under Results.

## Results



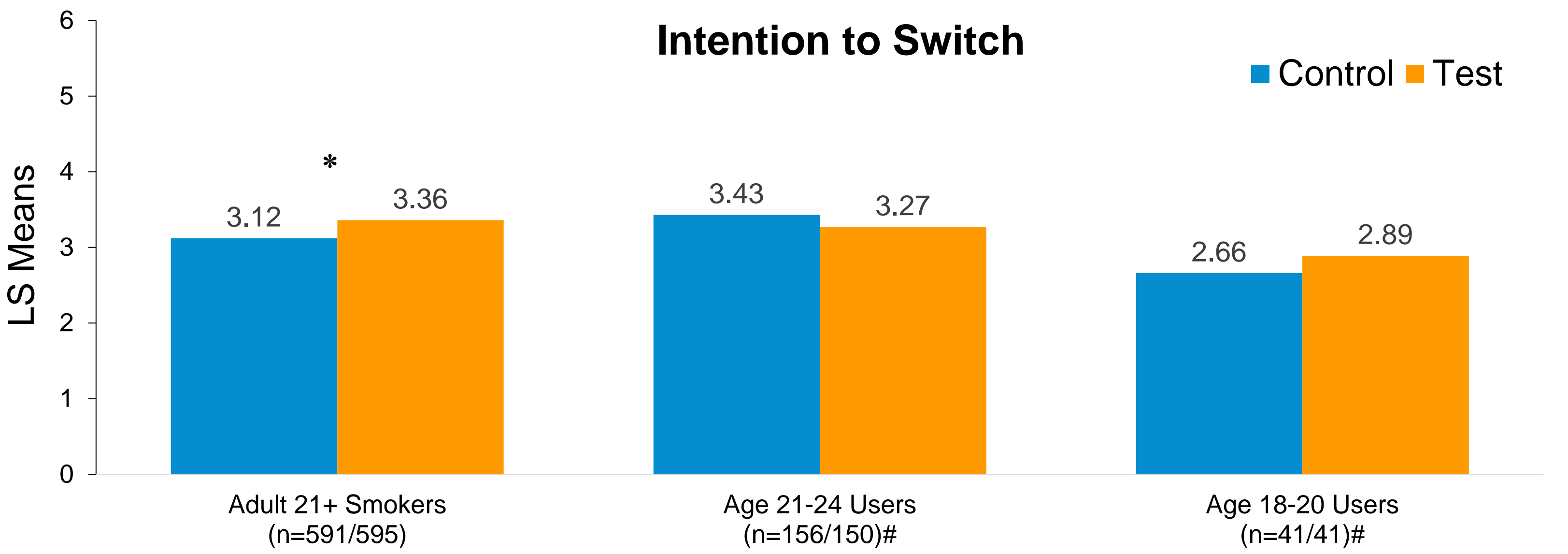
(Test vs. Control; \* indicates statistically significant differences).

"I am open to trying a [HTC brand] heated tobacco product in the next 30 days." (6-pt scale, Strongly disagree to Strongly agree); "Based on what you know about [HTC brand] heated tobacco products, how likely or unlikely are you to try [HTC brand]?" (6-pt scale, Definitely Not to Definitely); "Based on what you know about [HTC brand] heated tobacco products, how likely or unlikely are you to try a [HTC brand] product if one of your best friends were to offer a [HTC brand] product to you?" (6-pt scale, Definitely Not to Definitely). Composite Score calculated by averaging across the three measures, at the individual level. Least squares means reported.



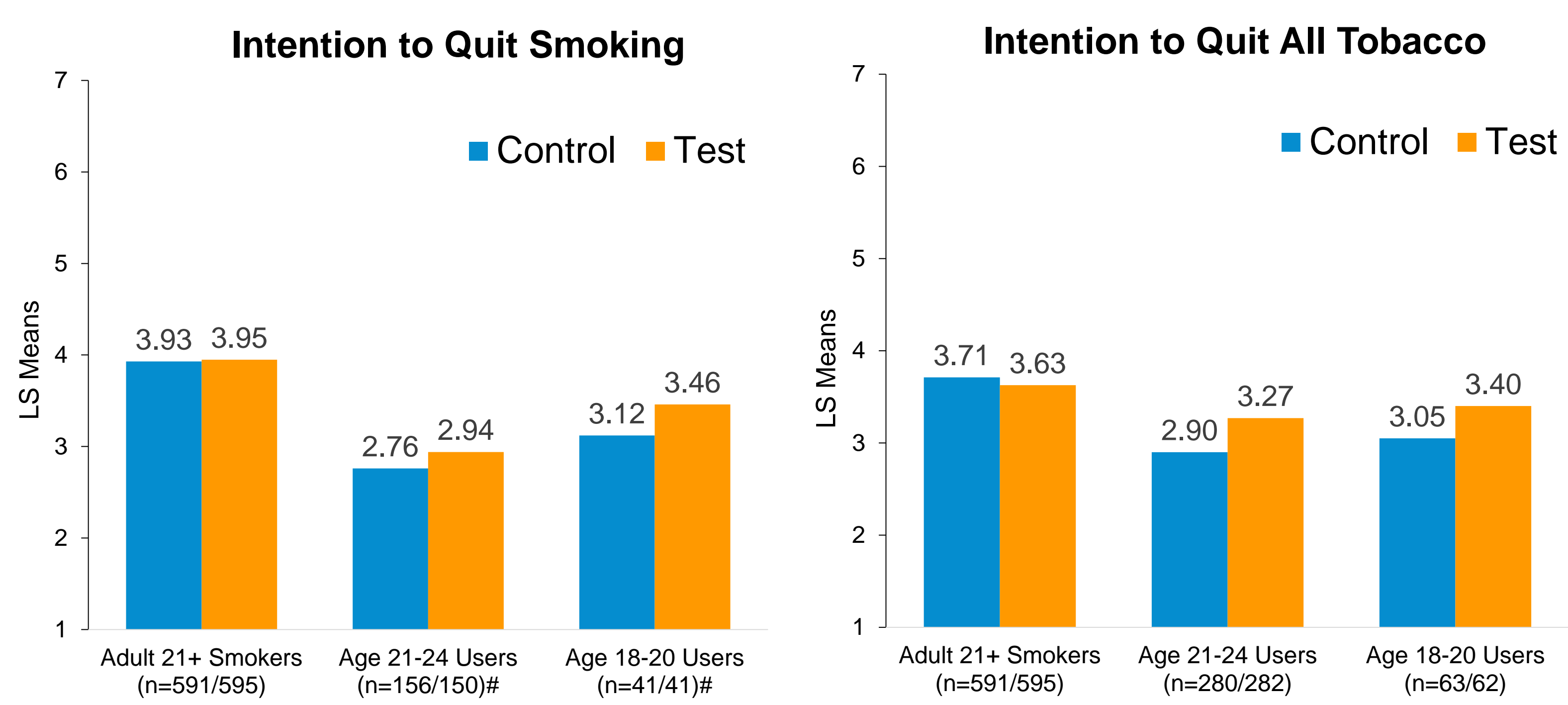
(Test vs. Control; \* indicates statistically significant differences).

"I would consider using a [HTC brand] heated tobacco product more than once." (6-pt scale, Strongly disagree to Strongly agree); "I expect to use a [HTC brand] heated tobacco product." (6-pt scale, Strongly disagree to Strongly agree); "It is likely that I will regularly use a [HTC brand] heated tobacco product in the next 6 months." (6-pt scale, Strongly disagree to Strongly agree); "A [HTC brand] heated tobacco product will be my regular brand of tobacco in the next 30 days." (6-pt scale, Strongly disagree to Strongly agree). Composite Score calculated by averaging across the four measures, at the individual level. Least squares means reported.



(Test vs. Control; \* indicates statistically significant differences).

"I plan to gradually switch from regular cigarettes to a [HTC brand] heated tobacco product." (6-pt scale, Strongly disagree to Strongly agree); "I plan on using one of the [HTC brand] heated tobacco products as a complete replacement for regular cigarettes." (6-pt scale, Strongly disagree to Strongly agree); "I intend on switching from cigarettes to a [HTC brand] heated tobacco product in the next 6 months." (6-pt scale, Strongly disagree to Strongly agree). Composite Score calculated by averaging across the three measures, at the individual level. Least squares means reported. # Intention to Switch questions asked only of those who smoked cigarettes within these groups.



(Test vs. Control; No statistically significant differences)

"Which of the following describes you?" (7-pt scale, 1 = 'I don't want to stop smoking' to 7 = 'I REALLY want to stop smoking and intend to in the next month'). Least squares means reported. # Intention to Quit Smoking questions asked only of those who smoked cigarettes within these groups.

(Test vs. Control; No statistically significant differences)

"Which of the following describes you?" (7-pt scale, 1 = 'I don't want to stop using all tobacco products' to 7 = 'I REALLY want to stop using all tobacco products and intend to in the next month'). Least squares means reported.

## Conclusions

The study results suggest that, in the context of the proposed promotional materials, the novel HTC product may facilitate the transition of adults 21+ who smoke to a smoke-free future, while having minimal impact on nonusers and underage individuals.

- Adult 21+ Smokers who viewed the promotional materials reported significantly higher intentions to try, use, and switch to the HTC product than those who did not view the promotional materials.
- No significant impact on intentions to either try or use the HTC product was observed among adults 21-24 and among Age 18-20 adults who used tobacco.
- Both Nonusers 21+ and Nonusers 18-20 reported low intentions to try and use the HTC product, and exposure to promotional materials did not significantly impact intentions among this group.
- The promotional materials did not significantly impact quit intentions among Adult 21+ Smokers or Tobacco Users for any age group.

Limitations:

- A portion of the sample (11.1%; primarily young adults) was recruited through mall intercept using a non-probabilistic method due to difficulty in recruitment online, and therefore findings from these participants should be regarded as illustrative but not strictly representative of the general population.
- However, quota-based sampling techniques resulted in a sample representative of the U.S. adult population in terms of basic socio-demographic characteristics. The large sample size provided adequate statistical power for all analyses.

## References

1. Murkett R, Rugh M and Ding B. Nicotine products relative risk assessment: an updated systematic review and meta-analysis. F1000Research 2022, 9:1225 (<https://doi.org/10.12688/f1000research.26762.2>)
2. Gottlieb S, Zeller M. A Nicotine-Focused Framework for Public Health. N Engl J Med. 2017; 377(12):1111-1114.

