

Understanding the Impact of Vaping Prevention Messages on Adolescents

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OBJECTIVES



Introduce you to **Vaping Prevention Resource**



Current research about vaping prevention messages



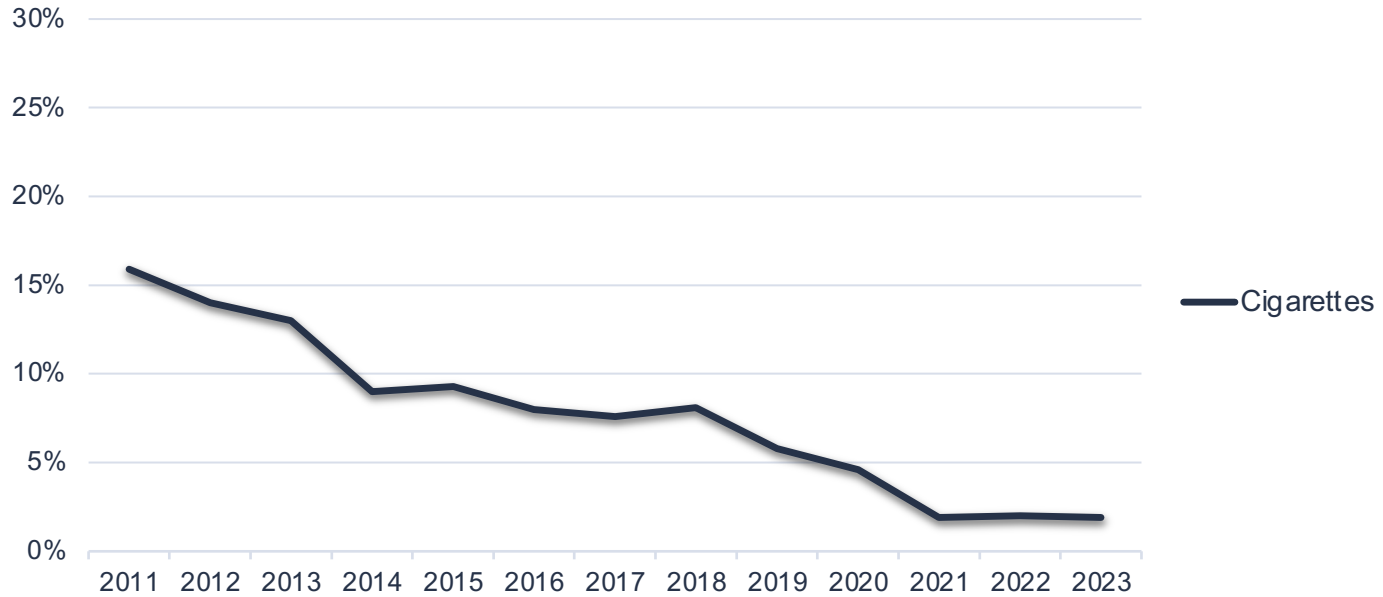
Best practices for vaping prevention communication

YOUTH TOBACCO USE



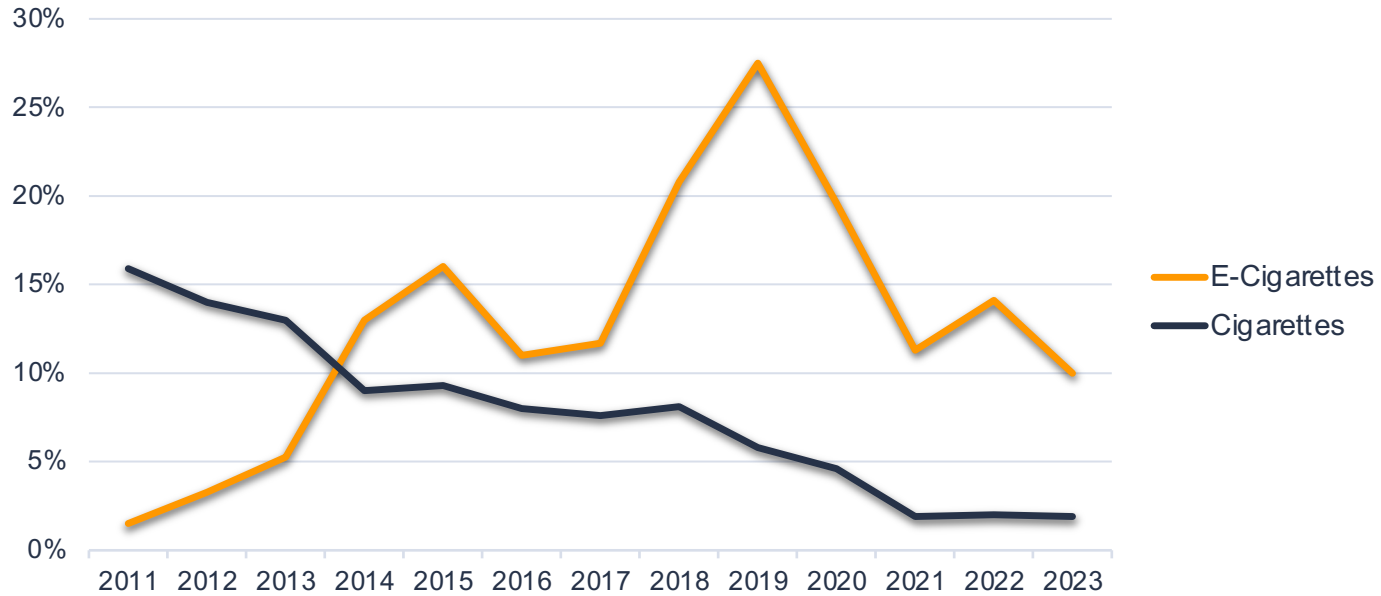


Smoking in Past 30 days (HS students)





Smoking and Vaping in Past 30 days (HS students)



VAPING PREVENTION RESOURCE



VAPING PREVENTION RESOURCE



Supporting health practitioners and communities

Founders



Kurt Ribisl, PhD



Seth Noar, PhD



Hannah Prentice-
Dunn, MPH

MEDIA GALLERY

950

ITEMS IN MEDIA GALLERY

>30

ORGANIZATIONS

The screenshot shows the 'VAPING PREVENTION RESOURCE' website's 'Media Gallery' page. The page features a search filter sidebar on the left with options like 'Item Format', 'What is the intended media channel for this item?', 'Target Audience', 'Target Audience: Age Group', 'Target Audience: Special Populations', 'Language', 'Year Produced', and 'Source Organization'. The main content area displays three media items: 'Smoke-Free Ride When Keiki Inside' (a poster with a cartoon family), 'DON'T GET FOOLED BY BIG VAPE' (a poster with a person's face), and 'WANT TO SAVE \$600 A YEAR? CUT OUT VAPING' (a poster with a person holding a wallet). Each item includes a rating indicator (e.g., 1 rating) and a download icon. The page also shows 'Showing 143 results out of 143 total items'.

CURRENT RESEARCH





STATE OF VAPING PREVENTION RESEARCH

- Communication campaigns are an evidence-based approach to preventing tobacco use

Yet we are still learning what kinds of messages are effective in discouraging vaping among youth



OUR RESEARCH

STUDY 1



Understand the influence of **vaping prevention message features** on adolescents' perceived message effectiveness (PME)

STUDY 2



Evaluate the impact of **the FDA's Real Cost video ads** on adolescents' susceptibility to vaping

STUDY 1

Study Phases



I: Content Analysis

- Print/web vaping prevention messages from VPR (n=220)
- Code objective message features



II: Survey Study

- Conduct study on adolescent perceptions of the messages
- Examine associations between objective message features and adolescent perceptions (PME)

STUDY 1: Coding Categories + Examples

Message themes

- addiction, chemicals, flavors, environment, cost

Imagery

- e-cigarette, warning, faces, animals, food

Text features

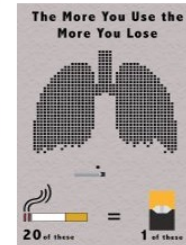
- hashtag, question, statistic

Message perspective

- you, I, we, teen

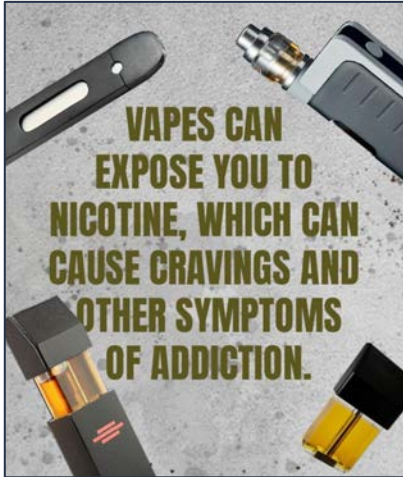
Other features

- source, vivid colors, meme



STUDY 1: Phase I - Message Coding

Example of Coding



- Nicotine/addiction theme
- Vaping device images
- Vaping accessory image (pod)
- Health symptoms
- Second-person ("you")



- Industry targeting theme
- Use of #
- Bright/vivid color
- First-person ("we")

STUDY 1: PHASE II - Survey Study

- Each participant rated 7 messages from the pool of 220 messages
- The 7 messages were presented in a **random order**
- Adolescents rated each message on **perceived message effectiveness (PME)**

How much does this ad... (Noar et al., 2023)

...make you worry about what vaping will do to you?

...make you think vaping is a bad idea?

...discourage you from vaping?

(1 = not at all, 5 = a great deal)

STUDY 1: PHASE II - Survey Study

Participants



Online, national
sample of $N=1,532$
adolescents
13-17 years old



70.7% White
22.5% Black/African
American
20.3% Hispanic/Latino



51.6% female
48.4% male



30% Past 30-day users
44% Susceptible to use
26% Non-susceptible to use

STUDY 1: ANALYSIS

- Computed multi-level model analyses controlling for demographics
- Examined the presence of each message feature on PME
 - **Positive effect:** presence of feature associated with higher PME
 - **Negative effect:** presence of feature associated with lower PME

FEATURE HAD POSITIVE EFFECT ON PME



Content

Water vapor	.17**
Unknown ingredients	.25**
Nicotine addiction	.25**
Death	.25**
Cigarette comparison	.31**
Health symptoms	.37**
Health effects on brain or lungs	.40**
Chemicals	.42**
Gateway to smoking	.55**

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Style

Poses a question	.09**
Source included	.09**
Second-person	.20**
language (“you”)	

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Style

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Source included	.09**
Second-person language (“you”)	.20**



Imagery

Graphic image	.73**
Warning symbol	.36**
Nicotine symbol	.31**
Cigarette	.30**

FEATURES HAD **NEGATIVE** EFFECT ON PME



Content

Industry Targeting	-.23 **
Environmental Impact	-.32 **
Flavors	-.25 **

FEATURES HAD **NEGATIVE** EFFECT ON PME

Content

Industry Targeting	-.23 **
Environmental	-.32 **
Impact	
Flavors	-.25 **



Style

Bright colors	-.12 **
Uses hashtag (#)	-.20 **
Meme format	-.34 **
Uses word teen	-.21 **
Uses first-person language (“I” or “we”)	-.33 **
Uses statistic	-.38 **

FEATURES HAD **NEGATIVE** EFFECT ON PME

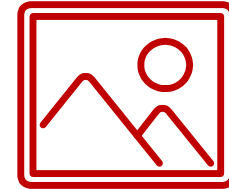
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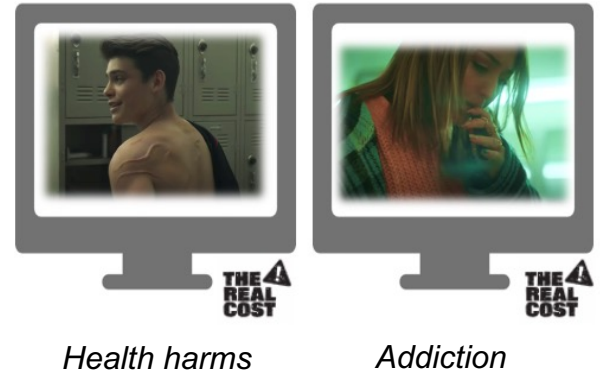
Imagery

Face	-.20**
Food	-.38**

STUDY 2

Research Questions

- Do FDA's *Real Cost* vaping prevention video ads reduce susceptibility to vaping?
- Do health harms or nicotine addiction ads have greater impact?



STUDY 2: Randomized Controlled Trial (RCT)

Participants

- Adolescents aged 13-17, screened susceptible to vaping

Design

- 3-week RCT with weekly ad exposures

Primary Outcome

- Susceptibility to vaping (3-item scale) at Visit 4

STUDY 2: STIMULI

Real Cost Trial Arms

3 health harms ads ($n=504$)



3 addiction ads ($n=506$)

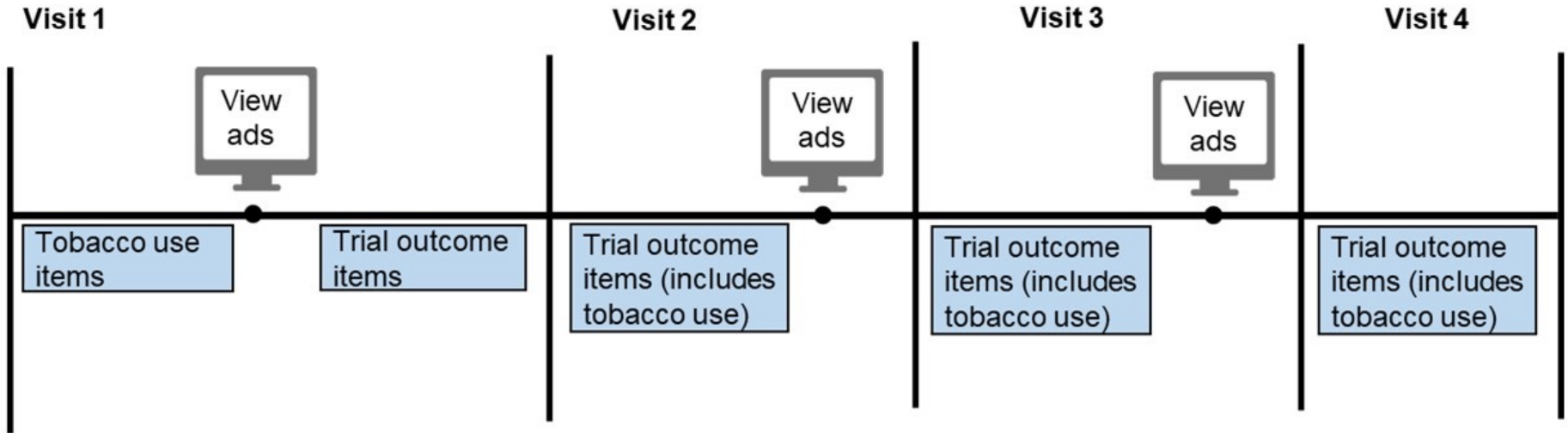


Control Arm

3 control ads ($n = 504$)

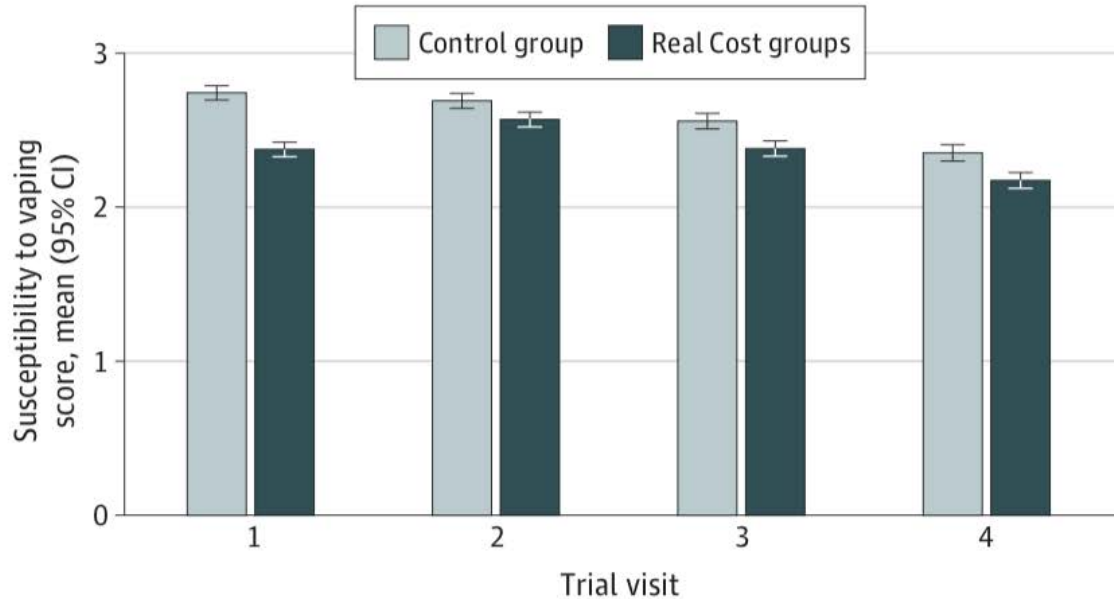
An e-cigarette is a battery-powered device that usually contains tobacco-derived liquid.

STUDY 2: RCT Design



STUDY 2: Results

Susceptibility to Vaping



STUDY 2: Results

- At Visit 4, Real Cost trial arms (compared to control) also had:
 - ▷ More negative attitudes towards vaping
 - ▷ Higher health harm risk beliefs about vaping
 - ▷ Higher addiction risk beliefs about vaping
 - ▷ Reduced vaping behavior
 - ▷ Lower susceptibility to smoking cigarettes
 - ▷ More negative attitudes about smoking cigarettes

STUDY 2: Results

■ Health harms vs. Nicotine addiction

- ▶ No difference between the two *Real Cost* trial arms on the primary outcome (susceptibility to vaping at Visit 4)

NEXT STEPS – VIDEO ADS

■ What makes an effective vaping prevention video ad?

■ Content features

- ▶ Themes
 - ▶ Thematic elements

■ Executional features

- ▶ Format
- ▶ Visual
- ▶ Audio

■ What are ideal combinations of ad features?

Theme

Damage to relationships



Nicotine addiction



Health effects



Future aspirations



Characters

Damage to relationships



White male teen

Puppets



Nicotine addiction



Health effects

Future aspirations

White female teen



Animal

Format

Damage to relationships

Acted out

White male teen



Puppets

Acted out

Nicotine addiction



Health effects

Future aspirations

White female teen

Testimonials



Animal



Setting

Damage to relationships

Acted out

White male teen



Home

Puppets



Social

Acted out

Nicotine addiction



Health effects

Ambiguous

Animal

Future aspirations

Outdoor

White female teen

Testimonials



Length

Damage to relationships

Acted out

White male teen



30 secs

Home

Puppets

30 secs

Social

Acted out

Nicotine addiction



Health effects

6 secs

15 secs

Ambiguous

Outdoor

White female teen

Animal

Future aspirations

Testimonials



Imagery

Damage to relationships

Acted out

White male teen



30 secs

Home

Puppets

30 secs

Social

Acted out

Nicotine addiction

Vaping device



6 secs

Future aspirations

Health effects

15 secs

Ambiguous

Outdoor

White female teen

Testimonials



Vaping cloud

Visual effects

Animal



EVIDENCE-BASED RECOMMENDATIONS





EVIDENCE-BASED PRACTICES



BEST PRACTICES



**PRACTICES TO AVOID
OR
USE WITH CAUTION**



BEST PRACTICES



Content

- Specific chemicals
- Health effects
- Consequences of addiction
- Comparing vaping to smoking



BEST PRACTICES



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- Specific chemicals
- Health effects
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- Comparing vaping to smoking



Style

- Second-person language ("you")
- Credible information (with sources)



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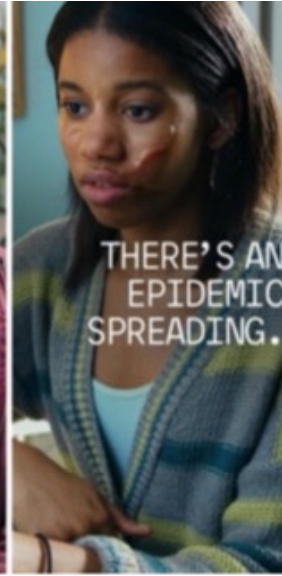
Imagery

- Graphic images
- Warning symbols
- Cigarette imagery

PROMISING MESSAGES



Some e-cigarette pods, such as Juul, contain 20x more nicotine than a single regular cigarette.



Rated highly on PME ($M = 3.92 - 4.33$)



PRACTICES TO AVOID OR USE WITH CAUTION



Content

- Flavor content
- Industry targeting
- Environmental impact



PRACTICES TO AVOID OR USE WITH CAUTION



Content

- Flavor content
- Industry targeting
- Environmental impact



Style

- Taking teens' perspective and voice (no first-person)
- Memes or hashtags
- General statistics



PRACTICES TO AVOID OR USE WITH CAUTION



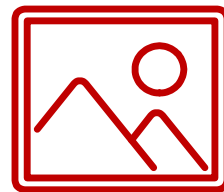
Content

- Flavor content
- Industry targeting
- Environmental impact



Style

- Taking teens' perspective and voice (no first-person)
- Memes or hashtags
- General statistics



Imagery

- Food or animals

“NOT” PROMISING MESSAGES



Rated highly on PME ($M = 2.07 - 2.39$)

BEST PRACTICES

Fact Sheet



vapingprevention.org



VAPING
PREVENTION
RESOURCE

**VAPING PREVENTION COMMUNICATION:
EVIDENCE-BASED PRACTICES**

To help federal, state, and local organizations effectively communicate with adolescents about vaping prevention, Vaping Prevention Resource has collected and synthesized emerging evidence about vaping prevention communication. This fact sheet provides an overview of the best practices, practices to avoid, and practices to use with caution when creating messages for adolescents.

BEST PRACTICES
Use these evidence-based best practices when creating vaping prevention messages for adolescents. The information below covers tips for the most promising content to include, style to use, and images to show in your messages.

Content
What should you write about?

- ▶ Specific chemicals found in e-liquid or vapor
- ▶ Health effects of vaping on the brain and lungs
- ▶ Specific symptoms of vaping, including: cough, headache, nausea
- ▶ Consequences of nicotine addiction
- ▶ Similarities between vaping and smoking

Style
How should you communicate?

- ▶ Simple, clear, and understandable
- ▶ Information backed up by credible sources
- ▶ Second-person language ("you")

Imagery
What imagery should you include?

- ▶ Graphic images about chemicals or health effects
- ▶ Warning imagery, such as an exclamation point or skull and crossbones

GET THE FACTS

- VAPES & YOUR IMMUNE SYSTEM**
Vape aerosol hurts immune cells in your blood, which are needed to fight infections in your whole body.
CREDIT: XXX
- Brain icon**
Nicotine can harm your brain, making your memory and ability to learn.
CREDIT: XXX
- NICOTINE CAN CAUSE SEIZURES**
CREDIT: XXX

See nearly one thousand real-world examples!
Check out Vaping Prevention Resource's [Media Gallery](#)
Vaping Prevention Resource is a non-commercial, education resource that provides practitioners, researchers, and communities with vaping prevention media content from around the U.S. and the world.
The VPR media gallery puts hundreds of vaping prevention media items at your fingertips.

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THANK YOU!

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Funding:

These projects were supported by grants R01CA246600, R01DA049155, and U54DA060049 from the National Cancer Institute, National Institute on Drug Abuse, and FDA Center for Tobacco Products. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH or the FDA.

Disclosures:

Seth Noar has served as a paid expert witness in litigation against tobacco and e-cigarette companies.

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REFERENCES

- Boynton, M., Sanzo, N., Brothers, W., Kresovich, A., Sutfin, E. L., Sheeran, P., & Noar, S. M. (2022). Perceived effectiveness of objective elements of vaping prevention messages among adolescents. *Tobacco Control, 32*, e228-e235.
- Kresovich, A., Sanzo, N., Brothers, W., Prentice-Dunn, H., Boynton, M. H., Sutfin, E. L., Sheeran, P., & Noar, S. M. (2022). What's in the message? An analysis of themes and features used in vaping prevention messages. *Addictive Behaviors Reports, 15*, 100404.
- Noar, S. M., Gottfredson, N. C., Vereen, R. N., Kurtzman, R., Sheldon, J. M., Adams, E., Hall, M. G., & Brewer, N. T. (2023). Development of the UNC perceived message effectiveness scale for youth. *Tobacco Control, 32*(5), 553-558.
- Noar, S. M., Gottfredson, N. C., Kieu, T., Rohde, J. A., Hall, M. G., Ma, H., Fendinger, N. J., & Brewer, N. T. (2022). Impact of vaping prevention advertisements on US adolescents: A randomized clinical trial. *JAMA Network Open, 5*(10), e2236370.