

Investigating and addressing the perceived risk of nicotine and very low nicotine content cigarettes

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Perceived risk about nicotine and VLNC

False belief nicotine is the main carcinogen

"The nicotine in cigarettes is the substance that causes most of the cancer caused by smoking." (HINTS, 2015)¹

Smokers: **64% incorrect** (or unsure)

Nonsmokers: **76% incorrect** (or unsure)

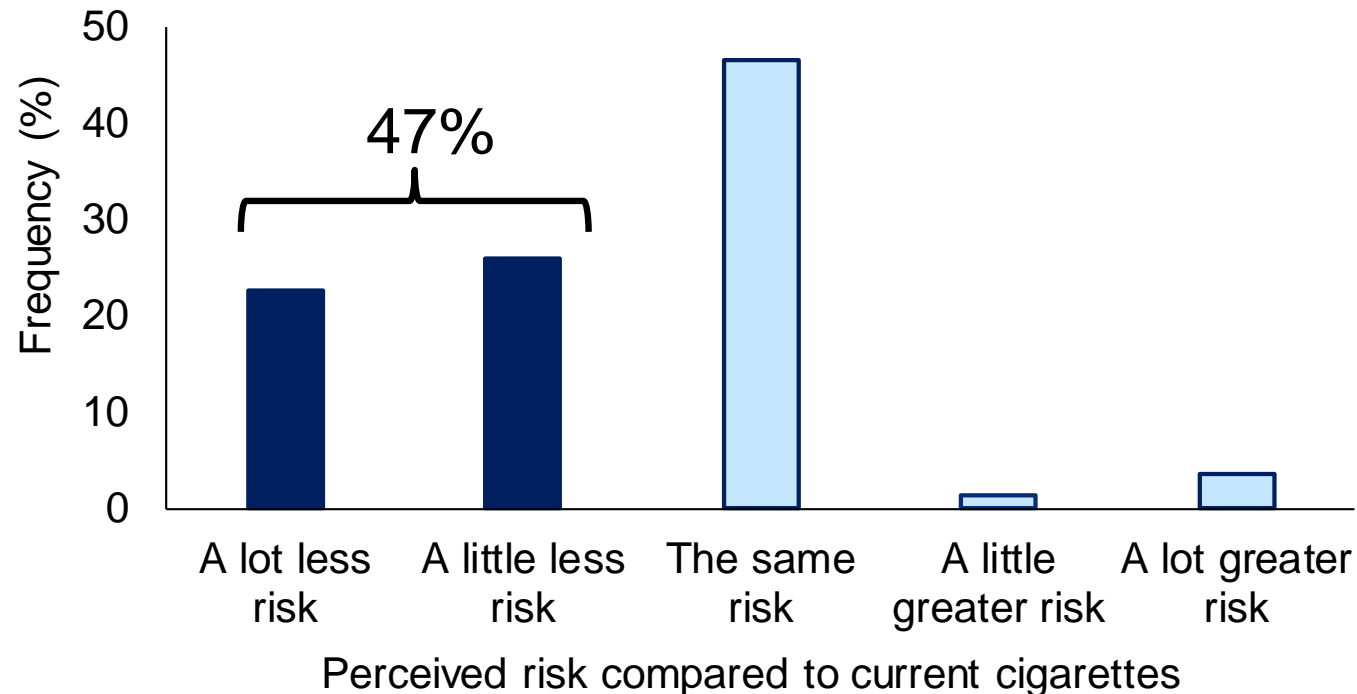
PATH Survey: **80% incorrect**²

Many studies reveal belief nicotine causes cancers and other health problems (emphysema, gum disease, etc.)³⁻⁶

Misperception VLNC are less risky to smoke

Smokers: **47% incorrect**, said smoking VLNC instead of current cigarettes for 30 years leads to less risk of cancer¹

Nonsmokers: **44% incorrect**²



VLNC misperception associated with *lower* intent to quit ($p < .01$)

1. Byron et. al., *Tob Control*, 2018 ($n=650$); 2. Byron, unpublished ($n=1,100$).

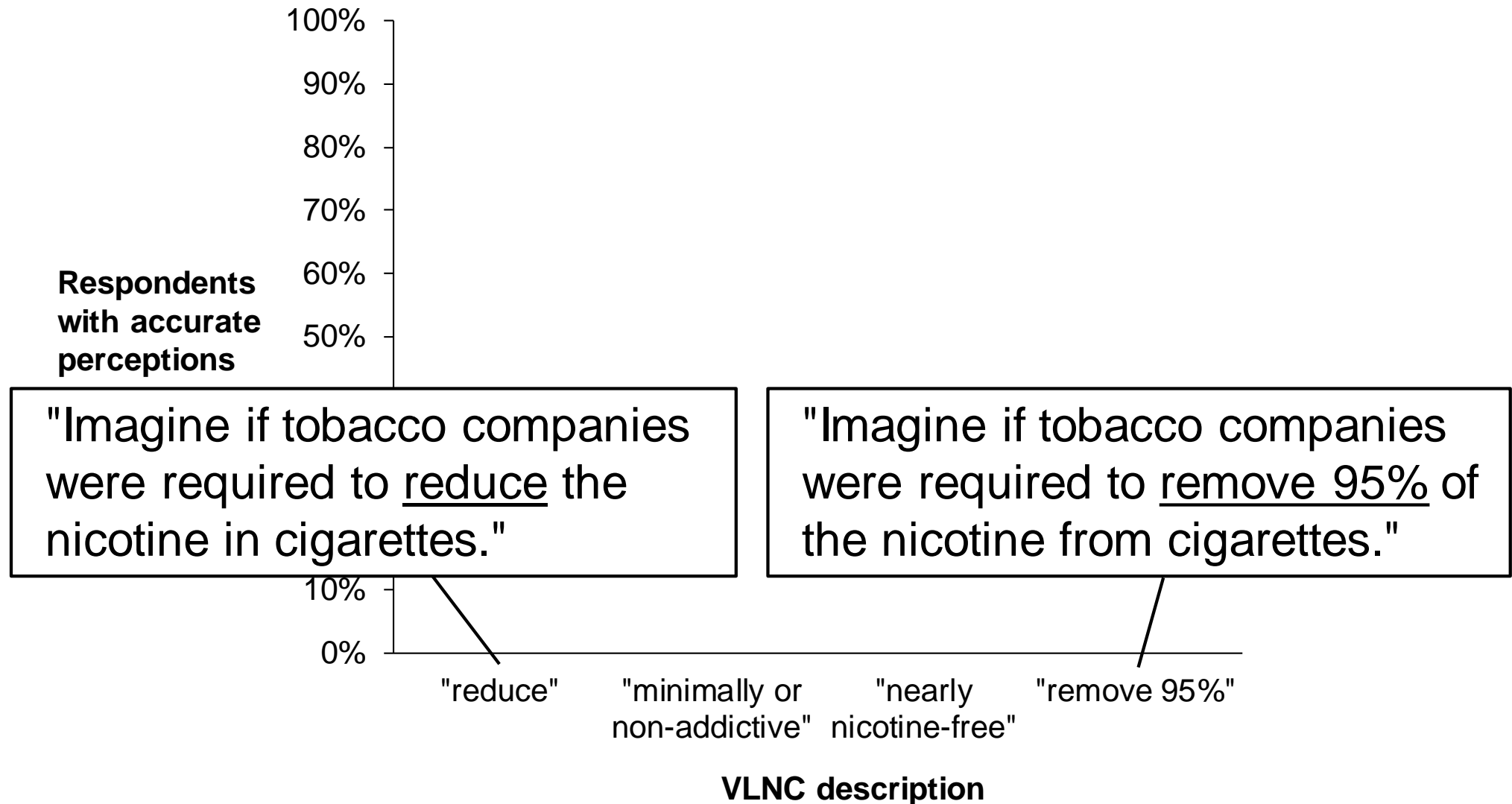
Risk survey item

Imagine the government required tobacco companies to remove most of the nicotine from cigarettes.

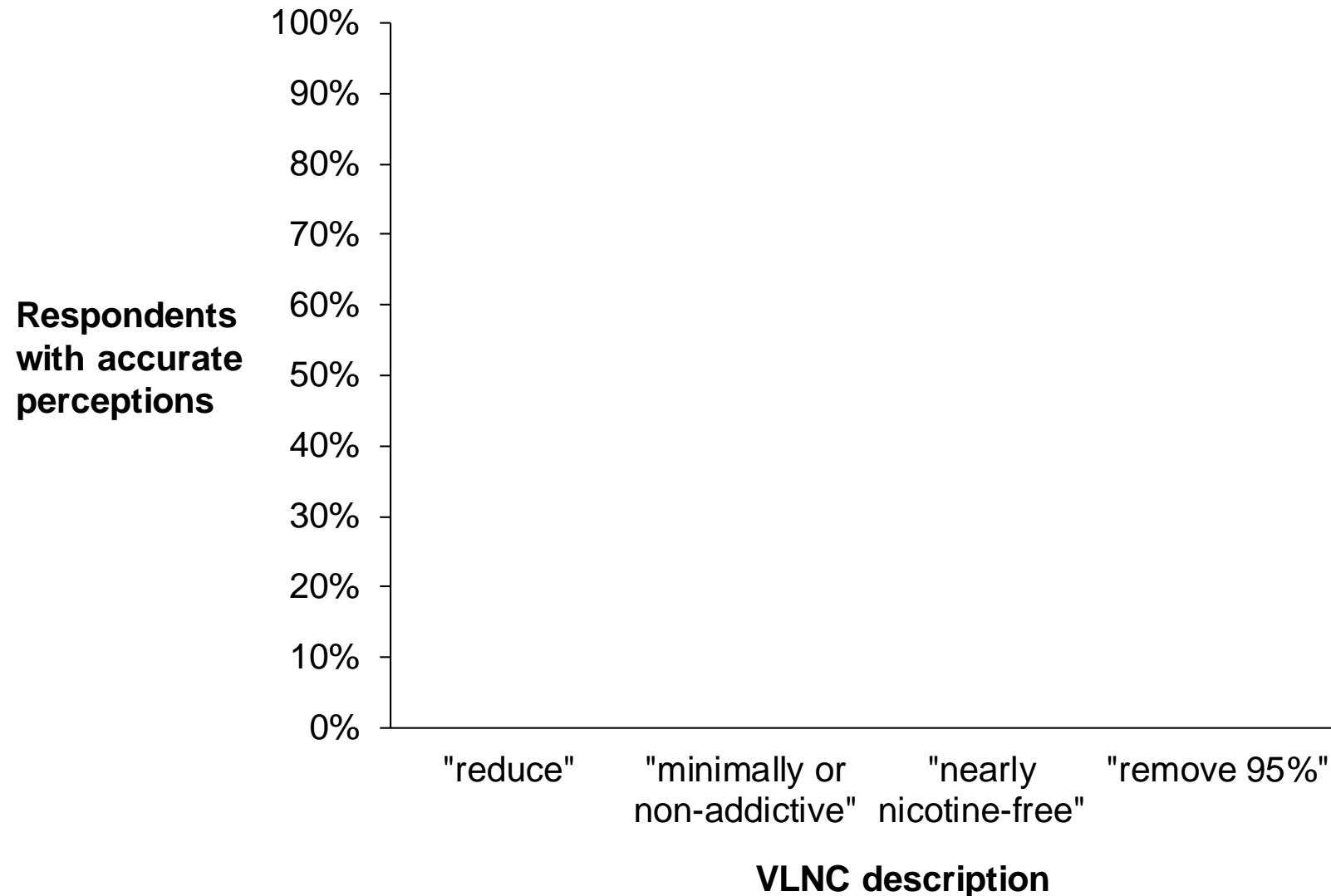
Compared to smoking current cigarettes, smoking cigarettes with much less nicotine for 30 years would cause:

- A lot less risk of lung cancer
- A little less risk of lung cancer
- The same risk of lung cancer
- A little greater risk of lung cancer
- A lot greater risk of lung cancer

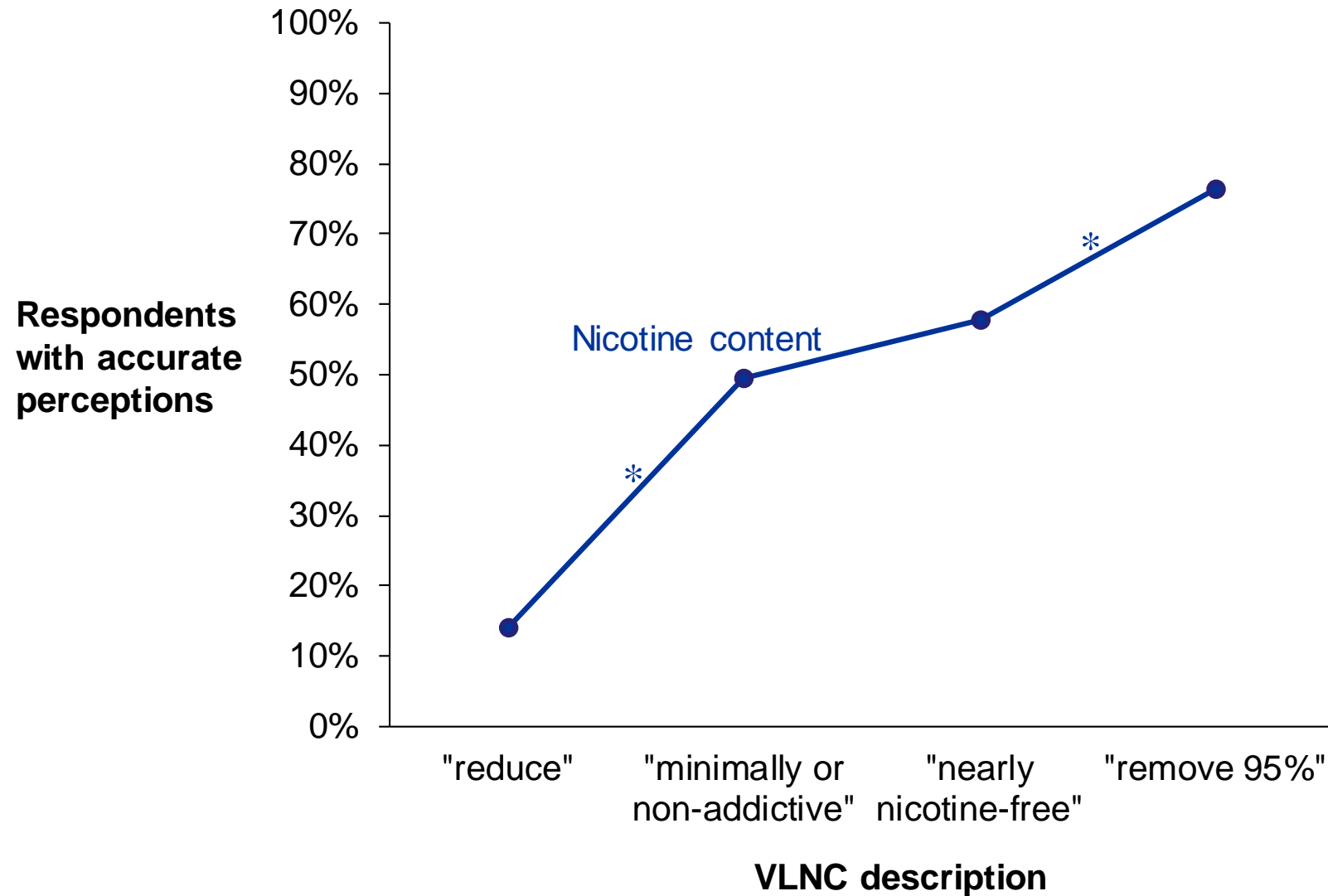
How nicotine content is described affects perceptions



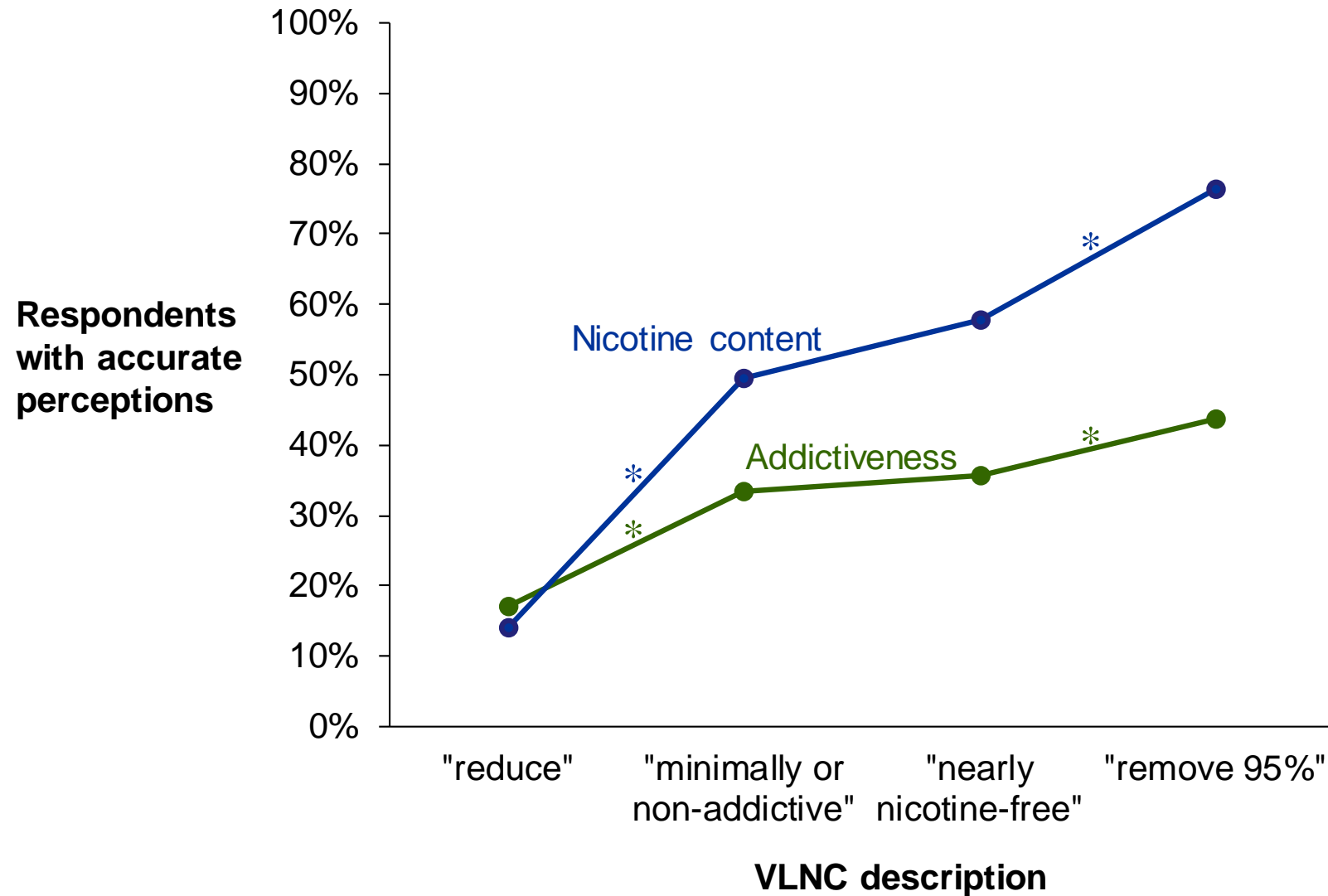
How nicotine content is described affects perceptions



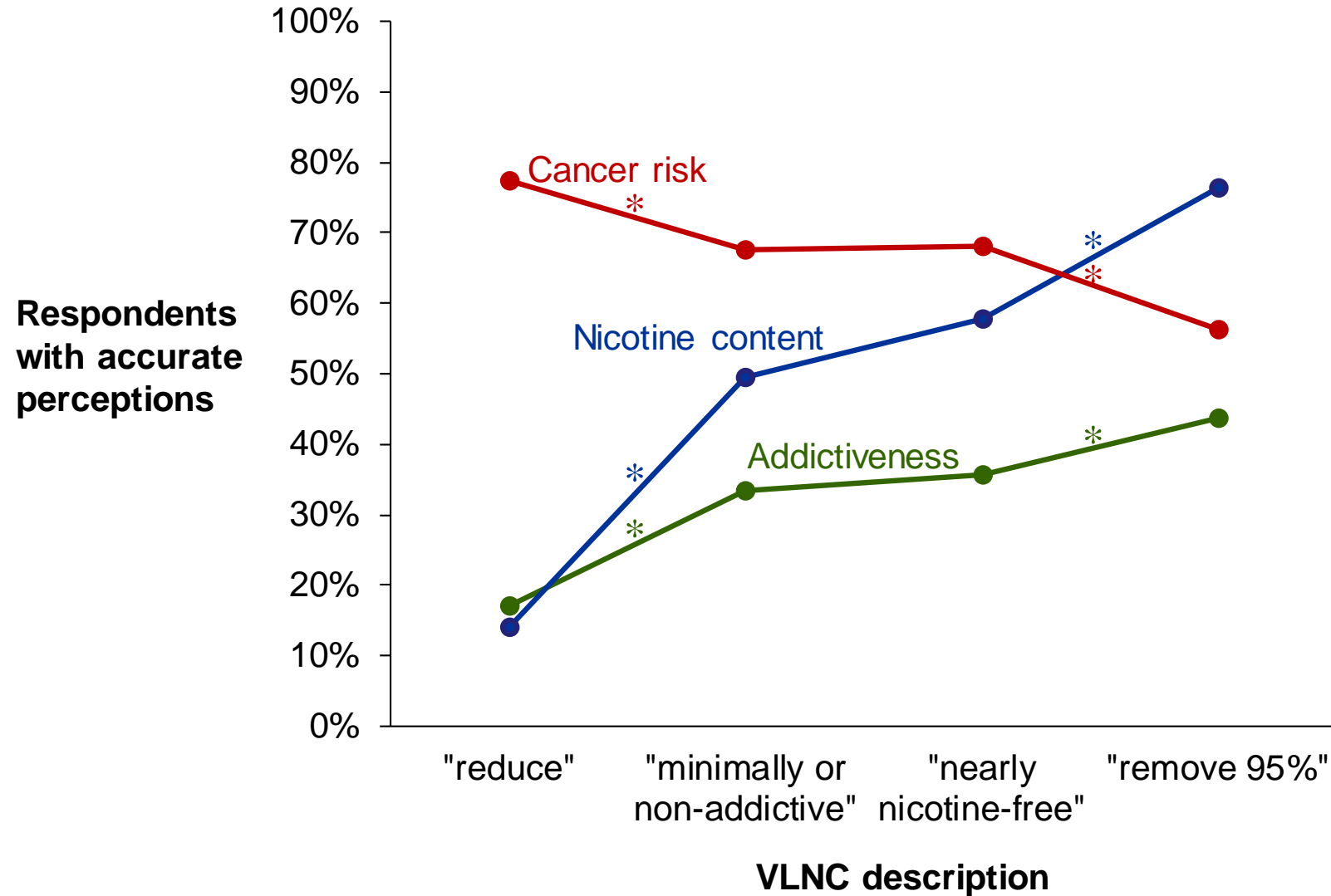
How nicotine content is described affects perceptions



How nicotine content is described affects perceptions



How nicotine content is described affects perceptions



VLNC misperceptions

- VLNC rated as significantly lower risk of: lung cancer, heart disease, stroke, emphysema, chronic bronchitis, and other cancers (Assuming same rate of smoking).¹
- In VLNC trial, positive correlation between perceived nicotine content and perceived risk.²
- Quest VLNC and low nicotine cigarettes perceived to be healthier, safer to smoke, less likely to cause cancer than other cigarettes.³⁻⁶

"Low nicotine" misperceptions

- In "light" cigarette marketing era, the reduction of nicotine in cigarettes was perceived to make cigarettes less dangerous.¹⁻³
- HINTS found cigarettes advertised as "low nicotine" rated as less harmful by 30% of US adults.⁴
- Focus groups found mixed opinions and uncertainty about harm of cigarettes marketed as "low nicotine."⁵

Chemical communication for cigarettes

People associate quantity of a harmful chemical in cigarettes with harm.¹⁻³

People expect that they are given information for a reason.⁴

Harmful chemical disclosure requirements can mislead.^{1,2,5}

Concerns that MRTP exposure modification pathway may be generally not be viable.^{6,7}

Correcting misperceptions

Correcting misperceptions

Approaches:

- Communication campaign
- Inoculation
- Disclaimers

Communication campaign

Broad-reach, well-funded campaigns can be effective.¹

A campaign is recommended in advance of VLNC policy.²

Pilot of messages on nicotine shows some promise.³

Ongoing research using established cognitive science techniques to correct VLNC misperceptions, e.g.,⁴⁻⁶

- Stating truth without repeating myth
- Providing alternative account
- Value affirmation

Inoculation

Neutralize misinformation before it is cognitively encoded¹⁻⁴

Two elements:

- Explicit warning of impending threat
- Refutation of anticipated argument, exposing the fallacy³

"Prebunking" rather than debunking

Because most people are not yet familiar with VLNC,
opportunity to prepare them *before* they develop
misperceptions

Disclaimers

Often used to reduce sellers' liability or as a remedy in legal settlements¹

Not grounded in communication and persuasion science¹⁻⁶

Review of 18 studies concluded "**no evidence that consumers benefit**" from mandatory disclaimers¹⁻²

Consumers glance at ads and make impressions quickly, forming attitudes and intentions to buy²

Natural American Spirit

As result of settlements, disclaimers for "additive-free" since 2000, "organic" since 2010.

Experiment found disclaimers did not overcome large positive effect of claims.¹

64% of smokers of American Spirits smokers believe that their brand is less harmful than other brands

vs. **8%** for smokers of other brands (PATH).²



1. Baig et al., 2019; 2. Pearson et al., 2017. Ad: trinketsandtrash.org

Why disclaimers fail

Disclaimers are¹⁻³

- not noticed (distracted by ad)
- ignored
- discounted
- distrusted
- misinterpreted



1. Byron et al., *Tob Control*, 2016; 2. Kesselheim et al., 2015;
3. Stewart & Martin, 1994. Ad: trinketsandtrash.org

Ineffective communication

Problematic aspects of disclaimers¹⁻⁴

- Using "**no**" or "**not**" phrasing
- Long text
- Less legible font, smaller size
- Less prominent location than claim
- May be absent from some communications

Switch to

VLN

95%
Less Nicotine
REAL TOBACCO



VLN™ smells, burns, and tastes like a conventional cigarette, but greatly reduces your nicotine consumption

Nicotine is addictive. Less nicotine does NOT mean safer. All cigarettes can cause disease and death.

SURGEON GENERAL'S WARNING: Cigarette Smoke Contains Carbon Monoxide.

REAL TOBACCO

VLN™ smells, burns, and tastes like a conventional cigarette, but greatly reduces your nicotine consumption

95% Less
Nicotine

**VLN**

Learn more at
vlncigarettes.com

Nicotine is addictive. Less nicotine does NOT mean safer. All cigarettes can cause disease and death.

**SURGEON GENERAL'S WARNING: Cigarette
Smoke Contains Carbon Monoxide.**

h. Point-of-Sale (shelf talker - 12" x 5.5")

Top flap folds and is placed under product on shelf to hold sign in place:



What we know about what works

	Campaign	Inoculation	Disclaimers
Have data	✓	✓	✓
Effective generally	✓	✓	✗
Effective for tobacco	✓	?	✗
Recommended	YES	Maybe	NO

Conclusions

1. Widespread (64-80%) false belief nicotine is the carcinogen
2. Common (47%) misperception VLNC are safer to smoke
3. An evidence-based communication campaign is worth exploring
4. Disclaimers are unlikely to be effective

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