

The Big Deal about Nicotine, Flavors, and E-Cigarettes:

Dr. MariaElena Gonzalez, Director of Research, NCPC

Dr. Anna Epperson, Director of American Indian Research, NCPC



Which Chemicals Are Found in E-Cig/Vape Pen Aerosol?

<ul style="list-style-type: none"> • Propylene glycol • Glycerin • Flavorings (many) • Nicotine • NNN • NNK • NAB • NAT • Ethylbenzene • Benzene • Xylene • Toluene • Acetaldehyde • Formaldehyde • Naphthalene • Styrene • Benzo(b)fluoranthene 	<ul style="list-style-type: none"> • Chlorobenzene • Crotonaldehyde • Propionaldehyde • Benzaldehyde • Valeric acid • Hexanal • Fluorine • Anthracene • Pyrene • Acenaphthylene • Acenaphthene • Fluoranthene • Benz(a)anthracene • Chrysene • Retene • Benzo(a)pyrene • Indeno(1,2,3-cd)pyrene 	<ul style="list-style-type: none"> • Benzo(ghi)perylene • Acetone • Acrolein • Silver • Nickel • Tin • Sodium • Strontium • Barium • Aluminum • Chromium • Boron • Copper • Selenium • Arsenic • Nitrosamines • Polycyclic aromatic hydrocarbons 	<ul style="list-style-type: none"> • Cadmium • Silicon • Lithium • Lead • Magnesium • Manganese • Potassium • Titanium • Zinc • Zirconium • Calcium • Iron • Sulfur • Vanadium • Cobalt • Rubidium
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The crux of the issue is flavors

- e-juice compounds
 - Solvent: propylene glycol (PG) and glycerol
 - Flavor chemical: Diacetyl
 - Flavors including vanilla, caramel, and coconut
 - POPCORN LUNG
 - Flavor chemicals: aldehydes benzaldehyde, cinnamaldehyde, citral, ethylvanillin and vanillin
 - Flavors in cherry, vanilla, and cinnamon flavor bases
 - When mixed with PG and glycerol, converts to acetals
 - Acetals activate TRPA1 and TRPV1 irritant receptors
 - Effects begin in e-liquid storage phase, not just vaping



Flavors in general are harmful

- Flavors is not just an issue with e-cigarettes!



The truth is, flavors includes menthol

- Menthols have traditionally been used to target vulnerable groups
 - Youth, African Americans, and women (Caraballo & Asman, 2011; Cruz et al., 2010)
 - ~50% of youth smoke menthol cigarettes (Truth Initiative, 2019)
 - 88% of African Americans smoke menthol (Truth Initiative, 2019)
- Menthol **increases** *nicotine dependence!*
 - *Reduces the time between needing nicotine among middle school smokers (Hersey et al., 2010)*
 - *Youth who initiate with menthols 80% more likely to become established smokers (Nonnemaker et al., 2012)*



Some things to consider



MR POD JUICE

STRAWBERRY MANGO FREEZE FLAVOR | POD
REFILL JUICE

★★★★★ 1 customer reviews

From 1 customer reviews

\$19.95



MR POD JUICE

MENTHOL BLAST MENTHOL FLAVOR | POD
VAPES REFILL JUICE

★★★★★ 6 customer reviews

From 6 customer reviews

\$19.95



MR POD JUICE

BERRY FLAVOR | POD REFILL | SALT
NICOTINE JUICE

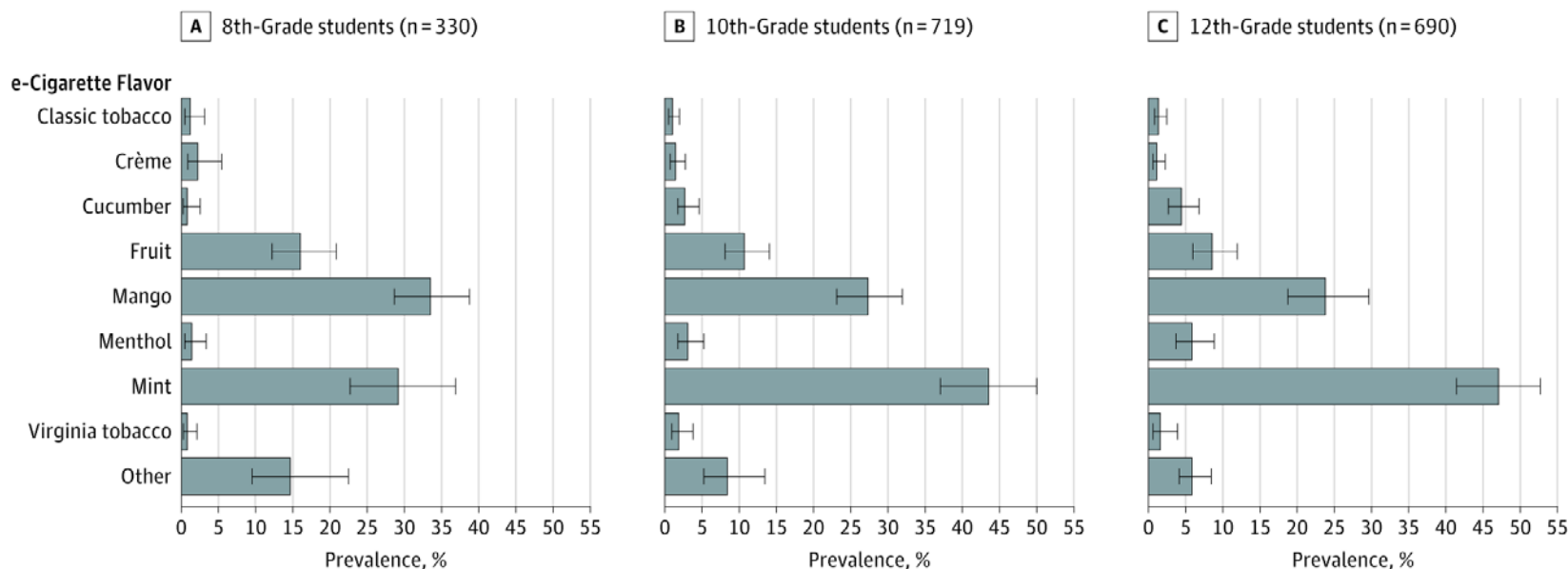
★★★★★ 4 customer reviews

From 4 customer reviews

\$19.95

Youth and Flavors

- Most youth initiating tobacco use start with a flavor
- A recent article in the Journal of the American Medical Association (JAMA) demonstrates



Scientific Interpretation

- Given the market share of flavors, in order to prevent youth uptake, it is important to create a flavor-free tobacco environment
 - This includes all tobacco products and all flavors, including mint and menthol
- Elimination of flavors would also be beneficial to adult smokers who want to quit smoking
 - Flavors may be a reason why most adult former smokers who use e-cigs, continue to be hooked on nicotine via e-cigs



THANK YOU



NICOTINE & CANNABIS POLICY CENTER
EVIDENCE BASED SOLUTIONS FOR CENTRAL CALIFORNIA





YOUTH & FLAVORED TOBACCO PRODUCTS

Merced City Council Meeting
11/18/2019

Gordon Arakawa, MD, PhD
Health Officer




To promote, protect, and preserve healthy living and safe environments

PRESENTING THE PROBLEM



To promote, protect, and preserve healthy living and safe environments



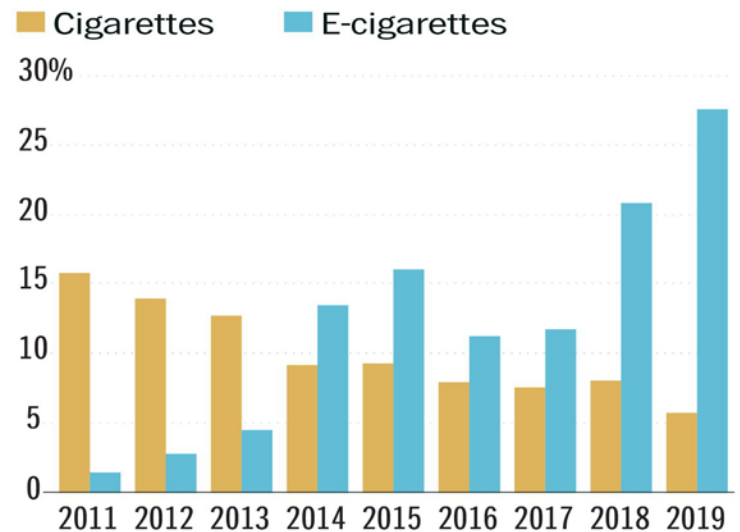
86.9% of all adult
cigarette smokers
began smoking by the
age of 18

Source: U.S. Department of Health and Human Services. The Health Consequences of Smoking: 50 Years of Progress. A Report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2014.

The Problem

- Flavored products threaten to undermine efforts to reduce youth tobacco use, putting a new generation of **kids at risk of nicotine** addiction and serious health harms that result from tobacco use
- Cheap tobacco products are **affordable and attractive to youth**
- More available in low-income communities of color

Teen e-cigarette use increases



Note: Data from the 2019 National Youth Tobacco Survey conducted of students in grades six through 12. Responses are from within 30 days preceding the administration of the survey.

SOURCES: U.S. Food and Drug Administration, Associated Press

YOUTH WHO USED **JUUL FLAVOR PODS** IN THE PAST 30 DAYS SAID THEY **OBTAINED THE DEVICE IN THE FOLLOWING WAYS.**

74%

PHYSICAL RETAIL
LOCATION



52%

SOCIAL SOURCE



6%

INTERNET



*youth could select multiple answers

truthinitiative.org



truth initiative
INSPIRING TOBACCO-FREE LIVES

TOBACCO RETAIL LICENSE (TRL)



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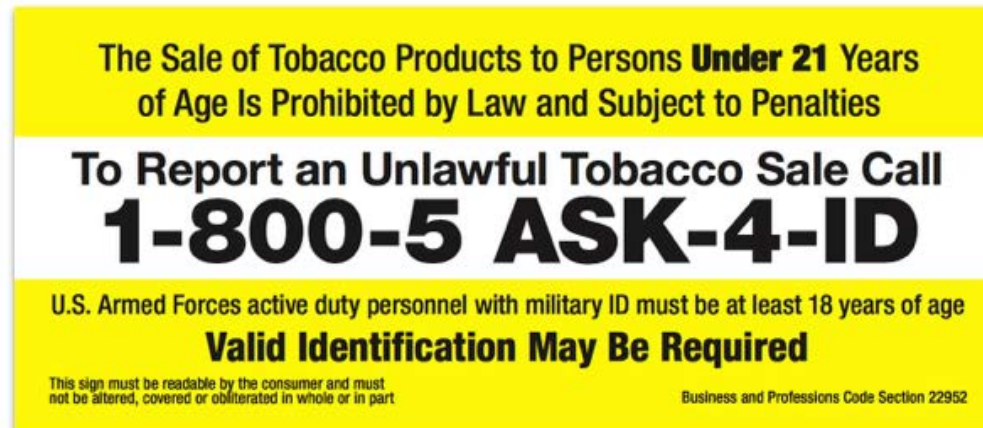
Benefits of a local Tobacco Retail License

- Self-funded enforcement program
 - through the annual renewal fee
- Coordination of tobacco regulations
 - violations of an existing local, state, or federal tobacco regulation violates the license
- Plug-ins
 - may include plug-in provisions to restrict location of tobacco retailers, flavored tobacco products, etc.
- Protect youth
 - reduce illegal sales of tobacco products to minors



Why a Tobacco Retail Licensing Program?

- Provides education to businesses on tobacco law
- Provides ongoing, consistent enforcement to prevent tobacco sales to minors



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Tobacco Retail License (TRL)

State-level TRL

vs.

Local TRL

- Renewed annually
- Target cigarette tax evasion & black market sales
- Doesn't fund local enforcement
- Doesn't include extra retail policies

- Tobacco retailers obtain a local license and renew annually
- Local level funding for enforcement
- May include plug-in provisions



Long-term Goal

A healthy environment for youth



ADVOCATES COUNTERING TOBACCO IN OUR NEIGHBORHOODS



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Contact us

Amalia Madrigal-Hernandez, MPH

Division Manager

Merced County Department of Public Health

Prevention, Policy, and Planning Unit

260 E. 15th Street, Merced, CA 95341

(209) 381-1232

Amalia.MHernandez@countyofmerced.com



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