

**LIFELONG
ADDICTION
OFTEN
STARTS OUT
SWEET**



Presented by:





FLAVORED TOBACCO: Why it matters

Flavors help mask the naturally harsh taste of tobacco, making flavored products more appealing to youth and easier to initiate and sustain tobacco use

Kostygina, G., S.A. Glantz, and P.M. Ling, 2014



The U.S. Surgeon General has declared e-cigarette use among youth an epidemic

US. Department of Health and Human Services, 2018

21% of all high school students in the U.S. report using an e-cigarette product in the past 30 days.

CDC Vital Signs: Tobacco Product Use Among Middle and High School Students, 2019



40% of students who use vaporizers use them because they taste good. Only 10% use them in an attempt to quit smoking combustible cigarettes.

King, B.A., et al., 2014

TYPES OF FLAVORED PRODUCTS

▶ Electronic Cigarettes

▶ E-cigarettes



▶ Vape pens



▶ Mods / tanks



▶ Pod Mods (JUUL)



▶ Liquid Nicotine Solution



TYPES OF FLAVORED PRODUCTS

▶ Menthol Cigarettes

▶ Cigars

- ▶ Little cigars
- ▶ Cigarillos
- ▶ Large cigars



▶ Smokeless Tobacco

- ▶ Chewing tobacco
- ▶ Dip
- ▶ Snuff
- ▶ Snus



▶ Shisha/ Hookah Tobacco



CANDY, FRUIT, ALCOHOL FLAVORS



Do flavors attract kids?

Flavored cigarettes were “starter products” for youth and thus, Congress banned them in 2009, with the exception of menthol.

Top reasons teens report trying e-cigarettes:

- Curiosity (54%)
- **Appealing flavors (44%)**
- **Peer influences (32%)**

Kong, G; Morean, M.E.; Cavallo, D.A.; Camenga, D.R., Krishnan-Sarin, S. (2014).



JUUL – Leading a New Epidemic

Benzoic acid reduces the harshness of a hit of the JUUL aerosol. This makes them easier to smoke and therefore easier to become addicted to tobacco.



One pod = equals the same amount of nicotine as a pack of cigarettes

tobaccopreventiontoolkit.stanford.edu

Liquid Nicotine Solution

The aerosol emitted from heated e-liquids emits toxic chemicals known to cause cancer, birth defects, and other reproductive harms

Daniels, M., 2015



The toxicity of a 60 mg dose of liquid nicotine is similar to or even higher than that of cyanide

Goniewicz, M.L., et al., 2014



Cigars



Little cigars are the second most common form of flavor tobacco used by youth

CDC Vital Signs: Tobacco Product Use Among Middle and High School Students, 2019

87 percent of adolescents who used cigarillos in the past 30 days used flavored cigarillos

Miech, R.A., Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E., 2015

Smokeless Tobacco



These products contain at least 28 carcinogens that can lead to

- **Gum disease**
- **Cancers of the mouth, lip, tongue, cheek, throat, stomach, pancreas, kidney, and bladder**

Primack, B.A., et al.2000; Mayo Clinic, 2014

Shisha and Hookah Tobacco

Hookah smoking is associated with lung cancer, respiratory illness, and periodontal disease

Akl, E.A., et al., 2010



Teens that use hookah are 2-3 times more likely to start smoking cigarettes and become current smokers

Primack, B.A., et al., 2016

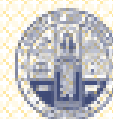
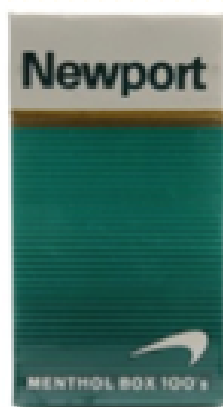
Menthol Cigarettes



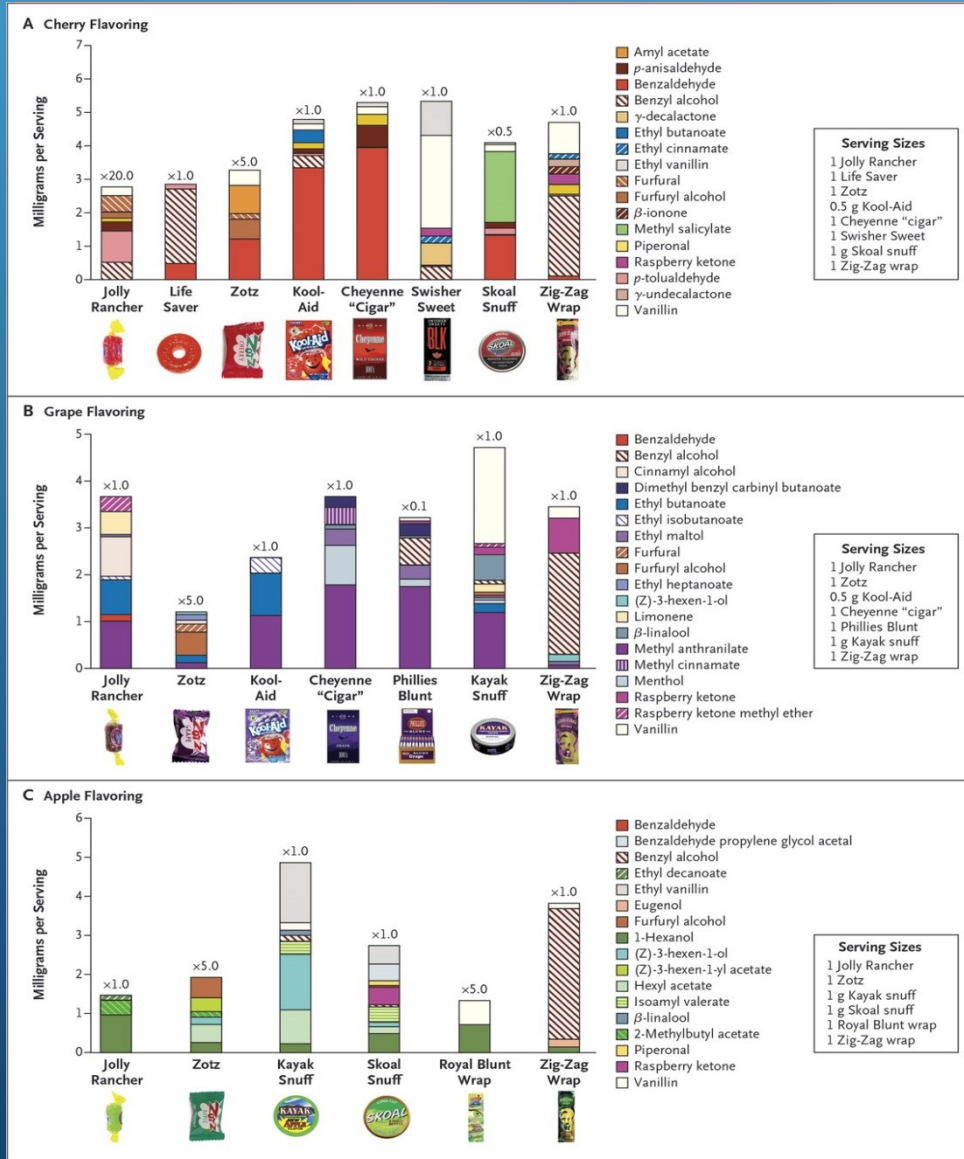
Are “starter” products that help new users establish daily habits and promote addition to tobacco

Target African American and LGBTQ communities

57% of smokers in the US age 12-17 smoke menthol cigarettes



Flavoring chemicals used in some tobacco products the same as those in popular candy



CHEAPER AND SMALLER PACK SIZE



Cigarette vs Little Cigar



More Nicotine = More Smoking & Vaping

New Online

Views 7,055 | Citations 0 | Altmetric 752

Original Investigation

ONLINE FIRST

October 23, 2017

Associations of Electronic Cigarette Nicotine Concentration With Subsequent Cigarette Smoking and Vaping Levels in Adolescents

Nicholas I. Goldenson, BA¹; Adam M. Leventhal, PhD^{1,2}; Matthew D. Stone, BA¹; [et al](#)

» [Author Affiliations](#)

Why are we concerned about flavorings?



Flavorings = Chemicals

- Ethylpyrazine
- Dimethylpyrazine
- Trimethylpyrazine
- Tetramethylpyrazine
- Coumarin
- Acetylpyrazine
- Piperonal
- Damascenone
- Eleutheroside
- Rhodinol
- Trimethylcyclohex-2-butene-4-one
- Beta-Ionone

THE BRAIN ON NICOTINE

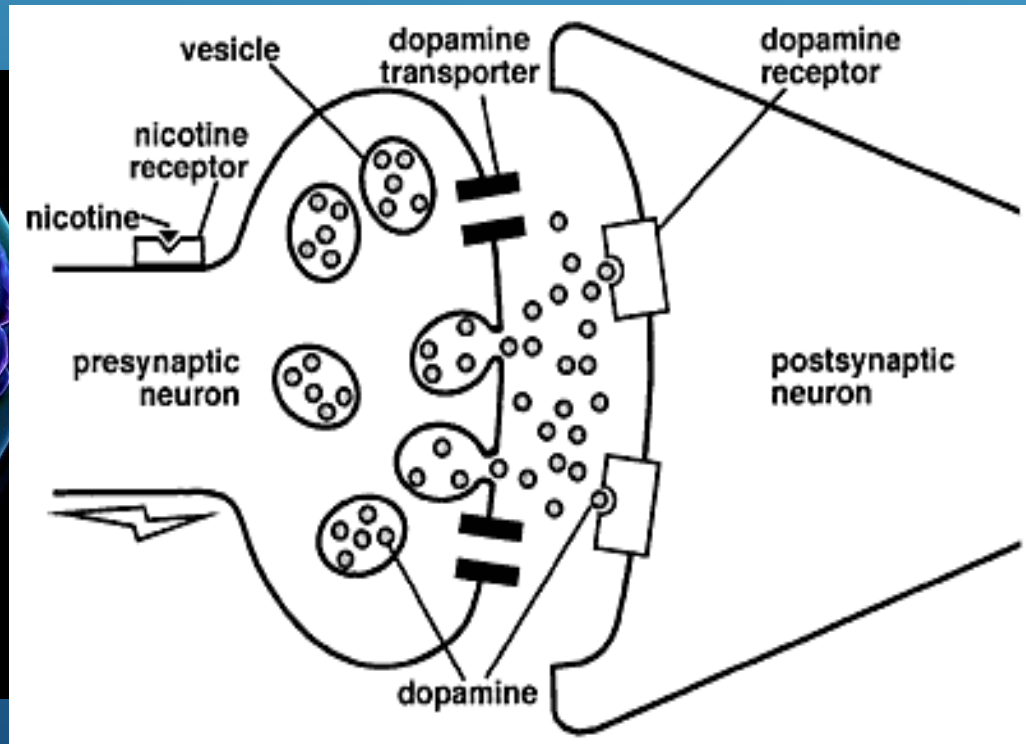
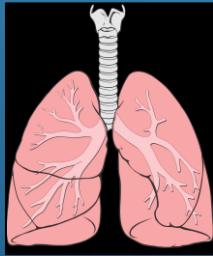


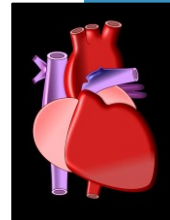
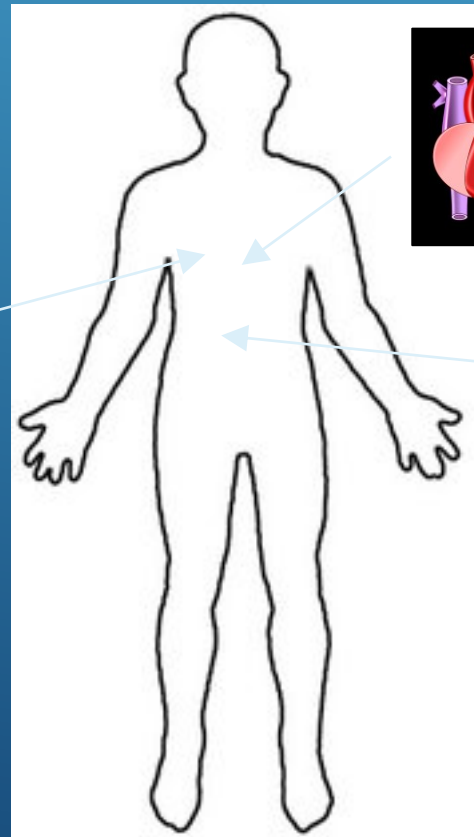
Image Credit: By United States: National Institute of Health via Wikimedia Commons



THE BODY ON NICOTINE



-trouble
breathing
-damage to
lungs



Heart beats faster
-activates “flight
or flight” response



Increased
acid reflux

Image Credit: Pixabay.com, Deviantart.com, Wikimedia Commons



Diacetyl and Popcorn Lung

Approved food flavoring

- Popcorn butter flavoring
- Buttery taste in chardonnay

Inhalation of diacetyl associated with popcorn lung (irreversible damage to lungs)



Diacetyl and Popcorn Lung

An anatomical diagram of the human respiratory system, showing the trachea and bronchial tree. The lungs are depicted with a yellow, popcorn-like texture, suggesting the presence of popcorn lung (bronchiolitis obliterans). The diagram is overlaid on a background of a bowl of popcorn.

**In a Harvard study, Diacetyl was found in
75% of flavored e-liquids tested**

Joseph G. Allen, et al., 2015

80% of U.S. middle and high school students who have ever used tobacco started with a flavored product



82% of current e-cigarette users have used a flavored e-cigarette



74% of current cigar users have used a flavored cigar



79% of current hookah users have used a flavored hookah

How can kids be protected from flavored tobacco?



Tobacco retail licensing can prohibit the sale of flavored tobacco



Establish minimum cost and pack sizes for tobacco products

Restrict sales near youth sensitive areas such as schools and parks



Questions?



YOUTH ACCESS TO TOBACCO CONTROL TEAM

FOR MORE INFORMATION OR SIGN UP TO VOLUNTEER PLEASE CONTACT:

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