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M E D I C I N E

The Vaping Phenomenon: What it is, Why it happened, and What you can do about it

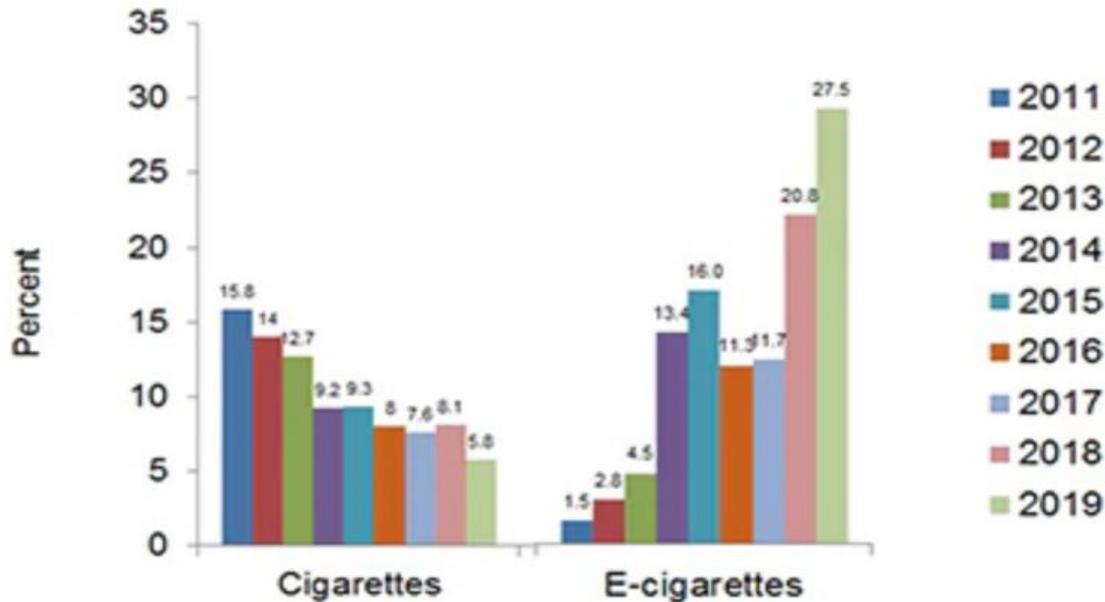
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Professor, Adolescent Med/Peds
Founder & Executive Director, TPT and CAPT

What I Will Cover

- National and local tobacco usage rates
- An introduction to e-cigs/vaping/Cannabis
 - What they are
 - How they work
 - What is in them
- Health effects
- Why youth are using vapes
- Policies to consider

National 2019 Data

NATIONAL YOUTH TOBACCO SURVEY*: HIGH SCHOOL STUDENT USE OF E-CIGARETTES CONTINUES TO CLIMB



* Preliminary data
* Reported use within 30 days preceding administration of survey.



Idaho Rates



- 43% of high school students have used e-cigarettes at least once
 - 2019 YRBS survey

Product After Product

E-Cigarettes (Formal/Scientific)
Vapes (Colloquial)



E-Juice/E-Liquid



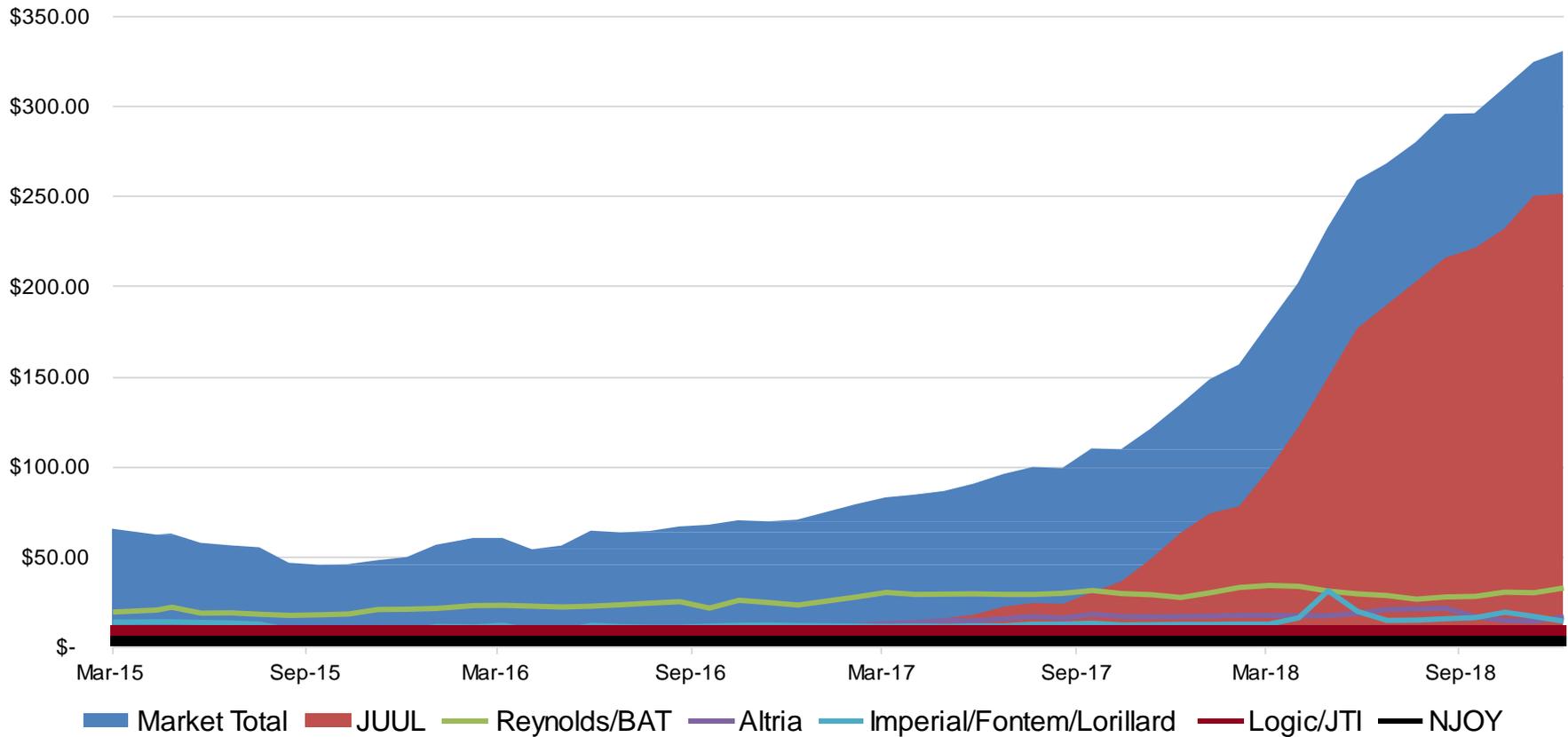
Product After Product

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The Rise of Juul

Monthly E-Cigarette Sales



Pod-Based Products



5th Generation: Disposables



E-Cigs = Tobacco

**E-cigs/JUULS=Nicotine
Nicotine comes from Tobacco
E-cigs/JUULS=Tobacco Products**



**Nicotine=Nicotine Dependence
E-cigs are addictive!**

For more information, visit: www.tobaccopreventiontoolkit.stanford.edu



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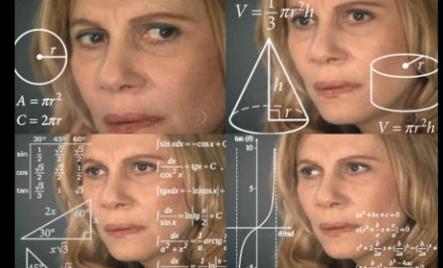


**Nicotine=Nicotine Dependence
E-cigs are addictive!**

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Cigs in a Pod



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1 Pack of Cigarettes
≈20 mg of nicotine

1 JUUL pod
≈41.3 mg of nicotine

1 PHIX pod
≈75 mg of nicotine

1 Suorin pod
≈90 mg of nicotine



=20
CIGARETTES

≈41
CIGARETTES

≈75
CIGARETTES

≈90
CIGARETTES



Which Chemicals Are Found in E-Cig/Pod-Based 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 	<ul style="list-style-type: none"> • Benzo(ghi)perylene • Acetone • Acrolein • Silver • Nickel • Tin • Sodium 	<ul style="list-style-type: none"> • Cadmium • Silicon • Lithium • Lead • Magnesium • Manganese • Potassium • Titanium • Zinc • Zirconium • Calcium • Iron • Sulfur • Vanadium • Cobalt • Rubidium
<p>All of these have been found in e-cigarette/pod-based aerosol</p>			
<ul style="list-style-type: none"> • Fluoranthene • Benz(a)anthracene • Chrysene • Retene • Benzo(a)pyrene • Indeno(1,2,3-cd)pyrene 	<ul style="list-style-type: none"> • Boron • Copper • Selenium • Arsenic • Nitrosamines • Polycyclic aromatic hydrocarbons 		

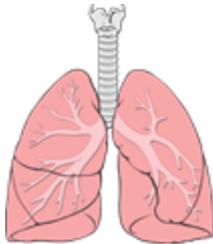
Compounds in orange are from FDA 2012, Harmful and Potentially Harmful Substances – Established List

The Body When Vaping

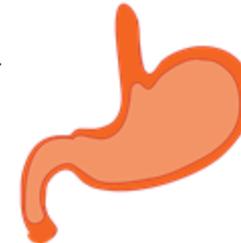
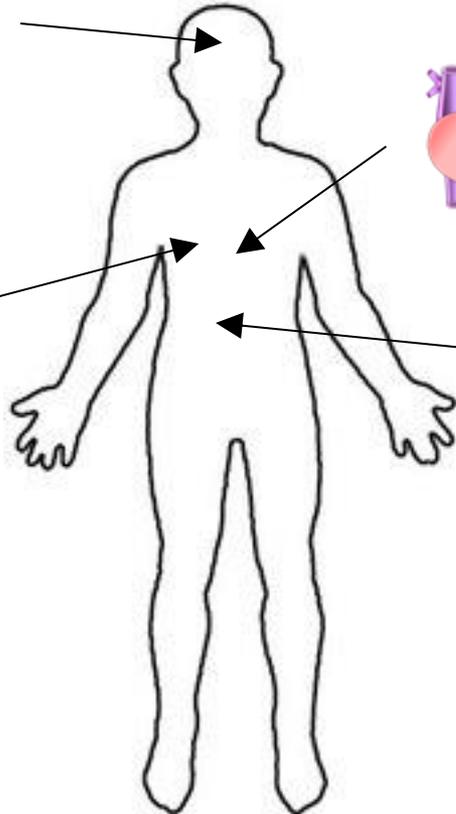
Rewires and changes the brain



Heart beats faster due to “fight or flight” response

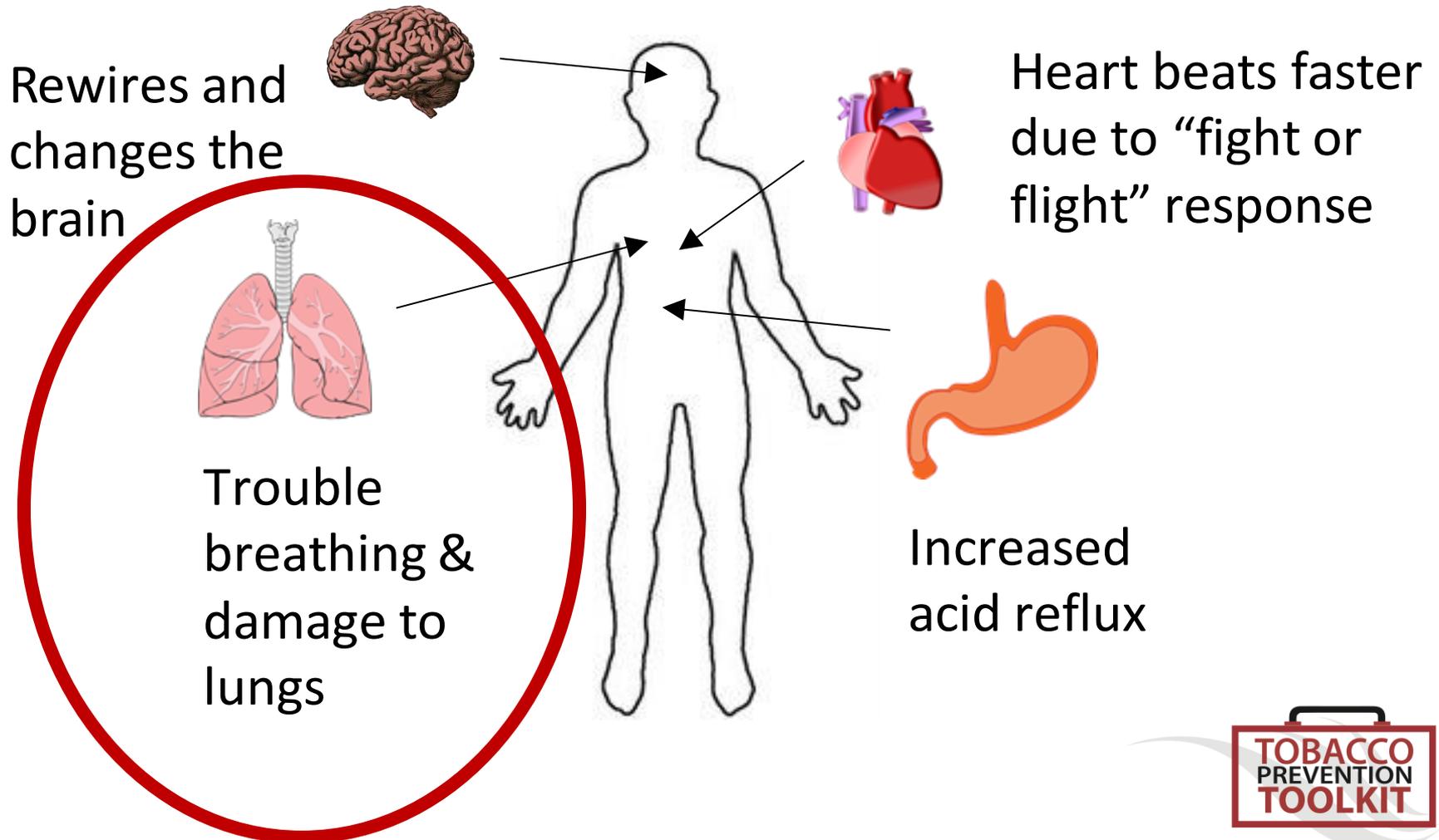


Trouble breathing & damage to lungs



Increased acid reflux

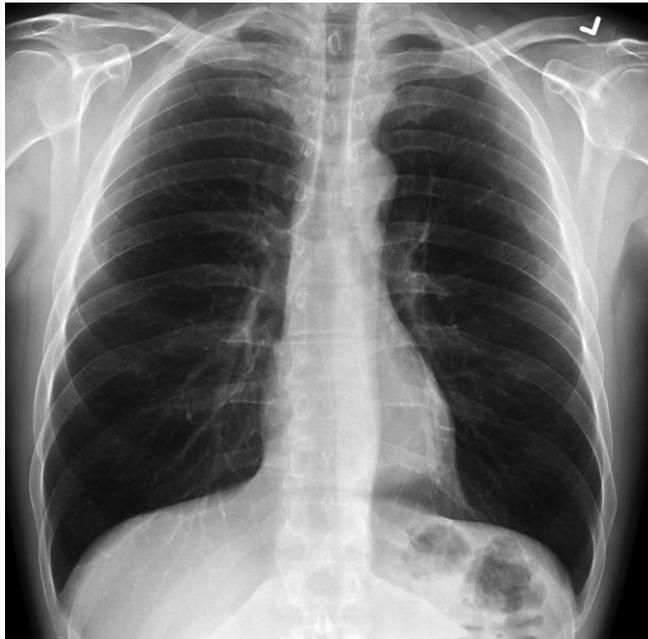
The Body When Vaping



Cannabis and Respiratory Illness

E-cigarette, or Vaping, product use **Associated Lung Injury**
(EVALI)

Healthy lungs



Vape-injured lungs



17yo victim



Tryston Zohfeld, TX

- ◆ 18 days in hospital
- ◆ 10 days medically-induced coma

Cannabis and Respiratory Illness: EVALI

2,711 hospitalized cases of severe lung damage *linked* to vaping
60 deaths confirmed (as of Jan 21, 2020)

16% under 18 years old

38% 18-24 years old

All vaped THC, nicotine or both

Vitamin E acetate suspected in many but not all cases

Symptoms: coughing, shortness of breath, chest pain, nausea, vomiting, abdominal pain, diarrhea, fever, chills, weight loss

Youth Appeal: Not a Mistake

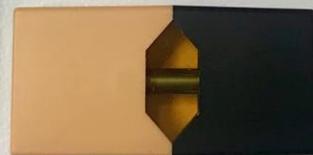


Hidden in Plain Sight



Hidden in Plain Sight





**TOBACCO
PREVENTION
TOOLKIT**

Misleading Product Packaging

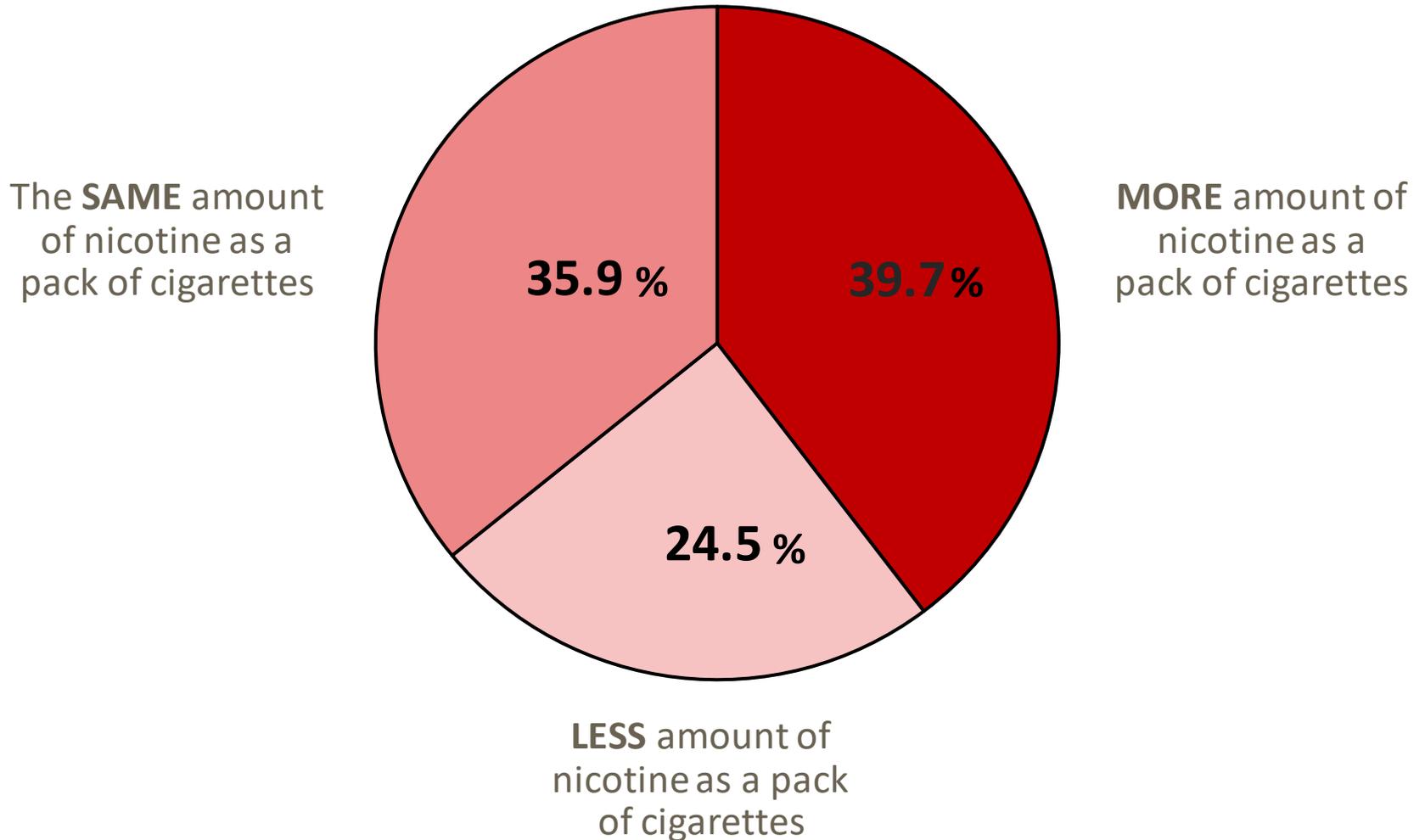


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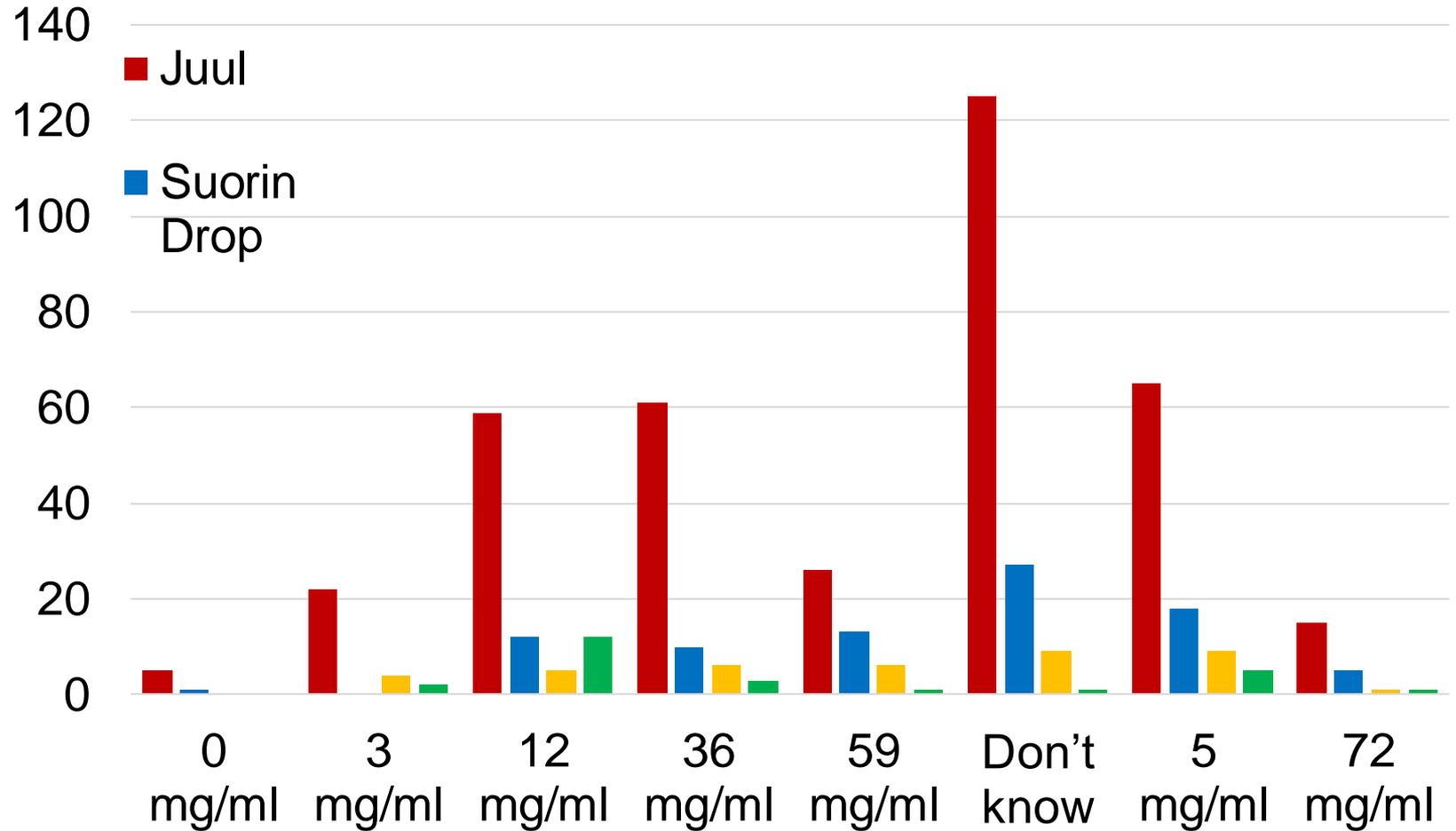
How Much is That?



How much nicotine do JUULs have...



How much nicotine do you think each product contains?



Flavors

Flavors of Vapes



15,500

tobacco flavors
and counting



NS, BOOGER SUGAR, BANANA BUTT, HONEY DOO DOO, BARNEY PEBBLES, DRAGON'S BLOOD, D



The Flavors

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Science News

from research organizations

Widely used e-cigarette flavoring impairs lung function

Date: May 23, 2018

Source: American Thoracic Society

Summa



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Sha

E-cigarette use, flavorings may increase heart disease risk, study finds

FULL STO

E-cigarette flavorings damage human blood vessel cells grown in the lab even in the absence of nicotine, Stanford researchers and their colleagues found. Cinnamon and menthol flavors were particularly harmful.

Cool and Youth-Focused Ads



JUUL

SHOP DEVICES SHOP PODS SUBSCRIBE & SAVE

YOU SAID IT
Read real reviews from actual JUUL users.



★★★★★

MANGO

LOVE, LOVE, LOVE The Mango Pods!!
I have tried others and nothing compares.

Melanie S.

SHOP ALL PODS

Social Media Targeting

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- Problematic memes and cartoons are also distributed via Twitter or Instagram, which give youth the impression that using is okay



Access

Access



Cost



COST: Juul vs Cigarettes

- 4 JUULpods: \$14.99 (Vapor Lounge)
- Cigarettes: \$5.41 per pack x 4 = \$21.64
- \$14.99 vs. \$21.64

JUULpods cost LESS than cigarettes!!!



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Disposables Even Less!



- Many are sold for \$1

But Don't Vapes Help Adults Quit Smoking Cigarettes?



What Policies Can Help: Federal Level



- Flavored, **cartridge-based** e-cigs (except for tobacco or menthol flavored)
- Other e-cig products for which the manufacturer has failed to take adequate measures to prevent minors' access
- **NOT** prioritizing “open systems” such as Suorin or disposal systems such as the Puff Bar, which are both very popular with youth, and come in attractive colors, flavors, and packaging

What Policies Can Help: State and Local Levels



- **Definitions (parity across tobacco products):**
 - E-cigarettes are tobacco products; therefore, fold e-cigarettes into all tobacco policies
 - Any new/emerging tobacco or nicotine product to come on the market → tobacco

What Policies Can Help



- **Access:**

- Need a permit system for all vape shops; compliance checks
- Youth are price sensitive. Equalize price points; tax e-cigarettes like all other tobacco products



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Thank you!

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