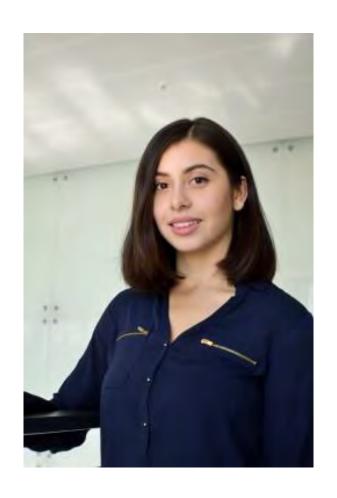
Adolescent Tobacco-Use **Prevention and** Cessation: What SBHC Providers, Educators, and **Adult Allies Should Know**







Elizabeth Peña (she/her)

Youth Engagement Project Coordinator, California School-Based Health Alliance











For audio, dial

For higher quality, dial a number based on your current location from your webinar invitation link







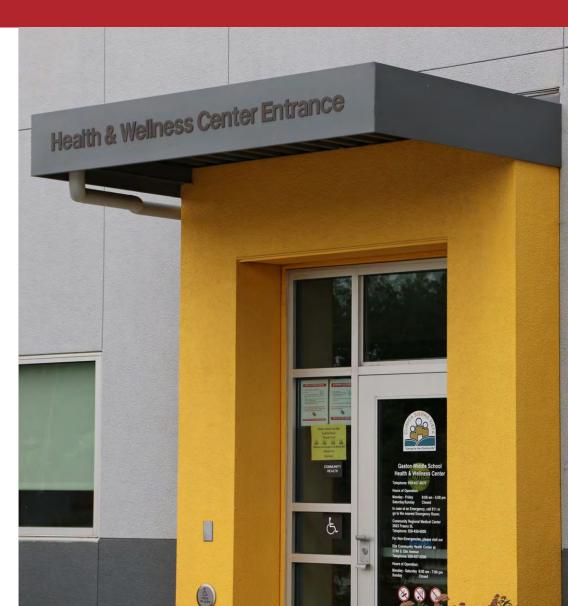


Putting Health Care in Schools

The California School-Based Health Alliance is the statewide non-profit organization dedicated to improving the health & academic success of children & youth by advancing health services in schools.

Learn more: schoolhealthcenters.org







Bonnie Halpern-Felsher, PhD, FSAHM (she/her)

Professor of Pediatrics

Director of Fellow's Scholar, Department of Pediatrics

Director of Research, Division of Adolescent Medicine

Founder and Executive Director,

<u>Tobacco Prevention Toolkit</u> and the

<u>Cannabis Awareness and Prevention</u>

<u>Toolkit</u>





Division of Adolescent Medicine

Department of Pediatrics

Stanford University





Adolescent Tobacco and Marijuana Use Prevention: What SBHC Providers, Educators and Adult Allies Should Know

Bonnie Halpern-Felsher, PhD, FSAHM Professor, Adolescent Med/Peds Founder & Executive Director, TPT, CAPT, & VISIT



Special Thanks to Our Funders















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CASA – Los Gatos





Disclosures

- Expert scientist in some e-cigarette litigation
- Expert for some city, state, and federal-level policies

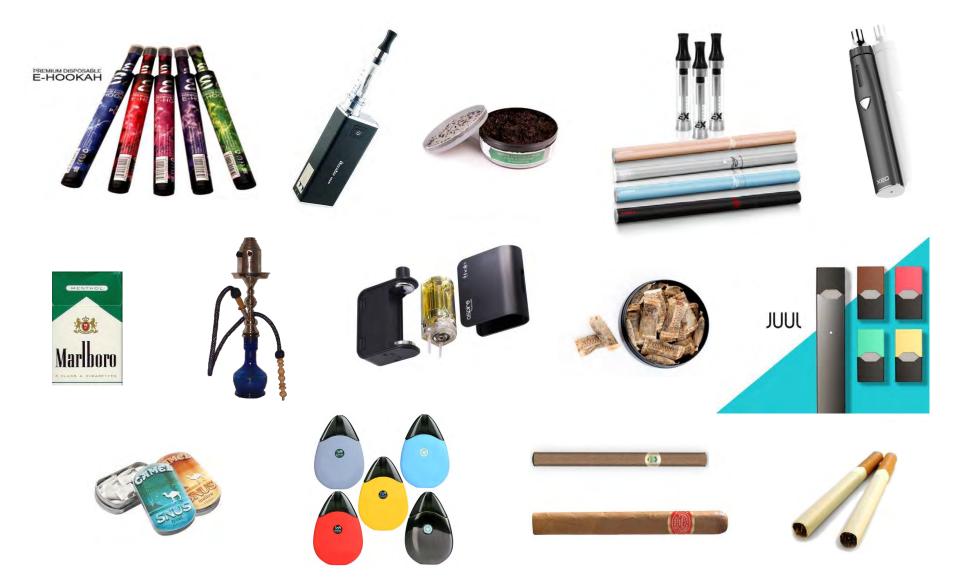




E-cigarette Products



Tobacco Products



E-cigarette Products



WARNING: THIS PRODUCT CONTAINS NICOTINE. NICOTINE IS AN ADDICTIVE CHEMICAL.

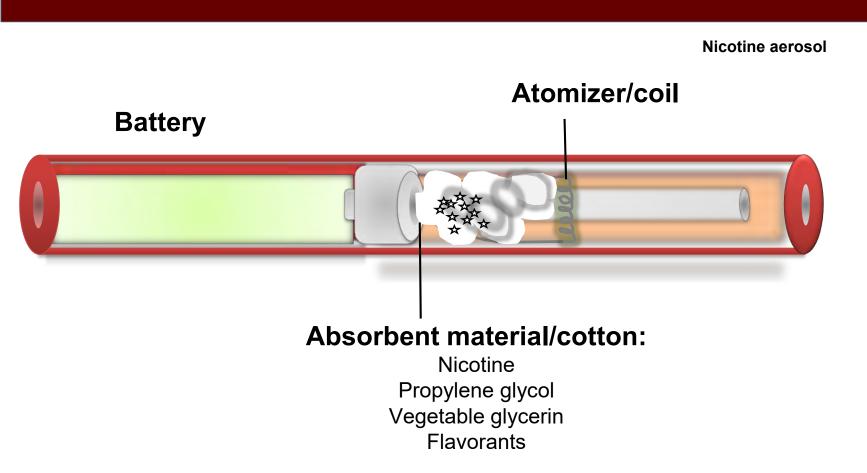




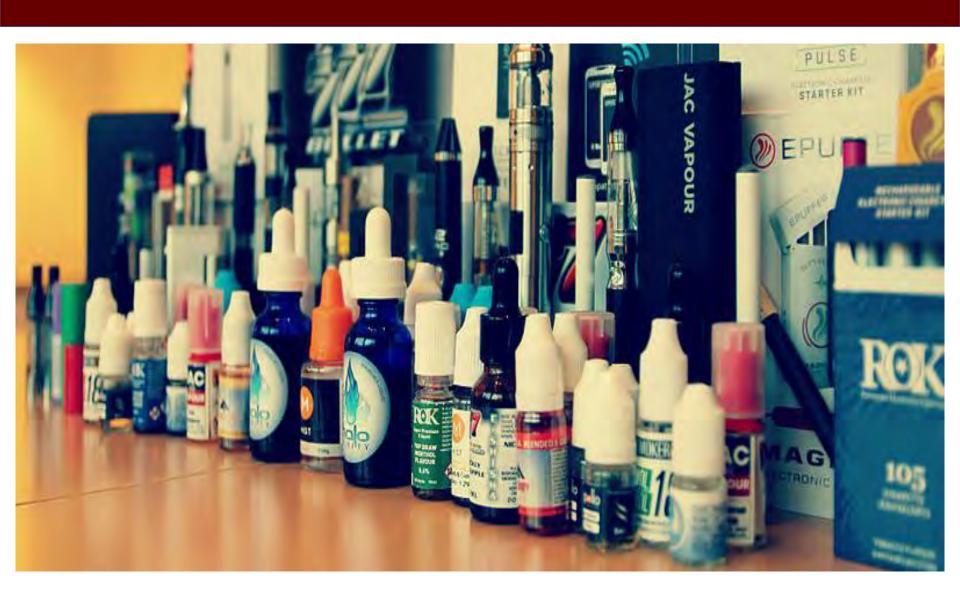




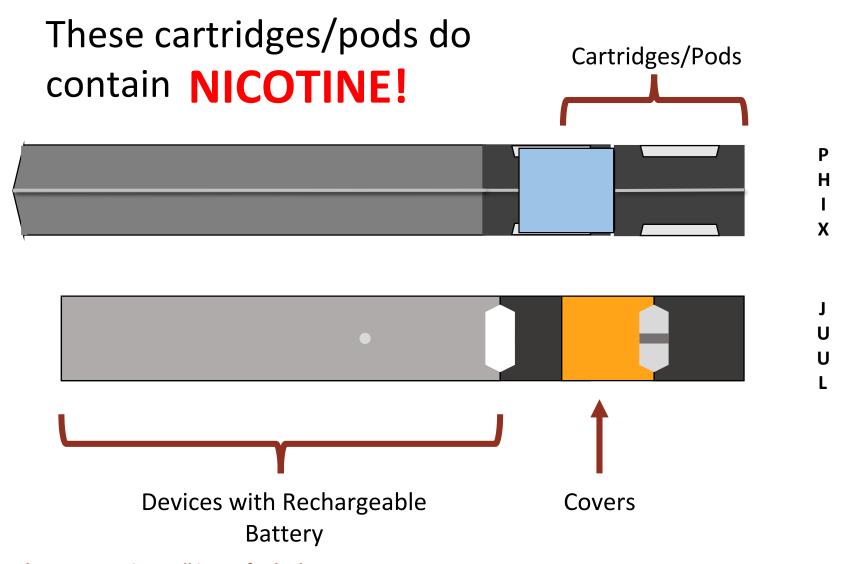
Anatomy of an E-Cigarette



E-Juice/E-Liquid



Anatomy of a Pod-Based System



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Marijuana Products



Marijuana/Cannabis Products

stan.md/capt













Aerosolizing or "Vaping"



- THC concentrate is aerosolized
- 5-10 seconds to feel the effect
- High lasts 30 minutes to several hours
- THC concentration depends on liquid; often mislabeled
- Not harmless



Dabbing



- Concentrated THC wax is heated, the aerosol is then inhaled
- 5-10 seconds to feel the effect
- High lasts 30 minutes to several hours
- ~80% THC concentration
- One of the methods most associated with emergency room visits



Edibles



- · Cannabis infused foods and drinks
- 20 min 2 hours to feel the effects
- High typically lasts for hours
- THC concentration varies greatly and is difficult to measure accurately
- Very easy to over consume







Other Products

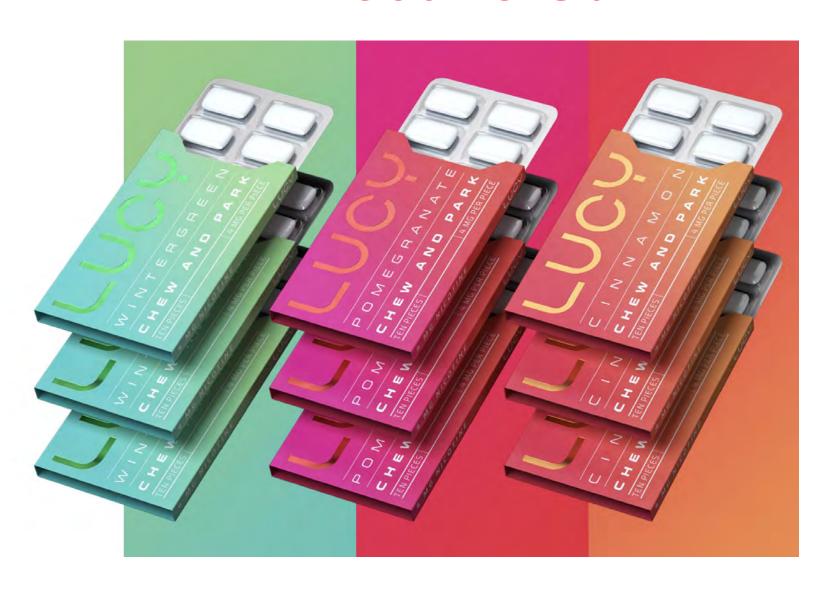


Nicotine Toothpicks

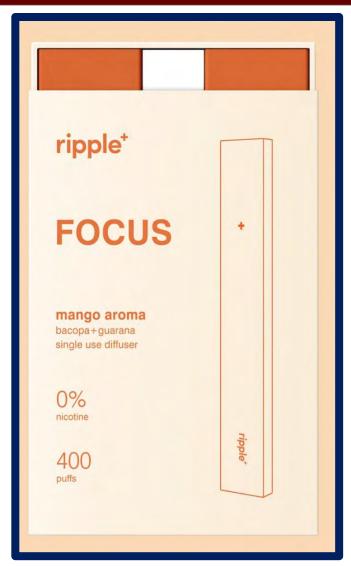


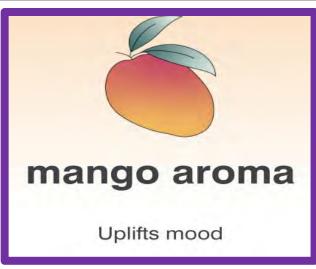


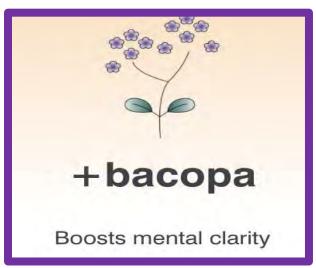
Nicotine Gum



Ripple Vape: Focus











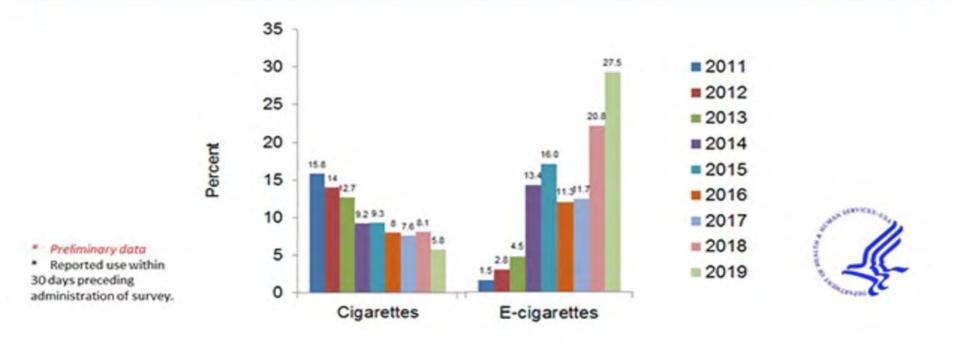


Use Rates



National 2019 Data

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



Source: U.S. Department of Health and Human Services, 2019

New National Data on Tobacco Use

- YRBS 2019 Data on Past 30-day Tobacco Use:
 - 32.7% E-cigs
 - 6.0% Cigarettes
 - 5.7% Cigars
 - 3.8% Smokeless tobacco (higher in more rural areas!)
- NYTS 2020 Data
 - Current e-cigarette users
 - 19.6% HS students (3.02 million)
 - 4.7% MS students (550,000)
 - Among current –e-cigarette users
 - HS youth

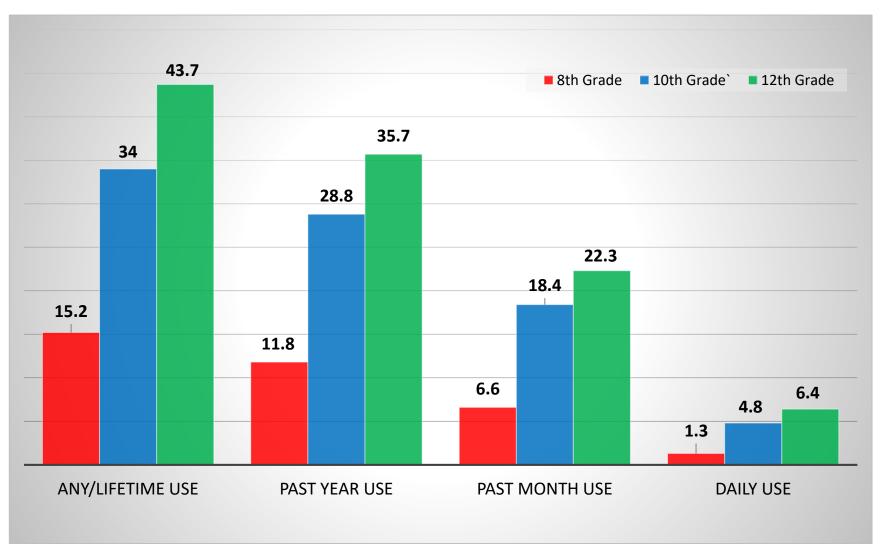
Past 30 days: 38.9% Daily use: 22.5%

MS youth

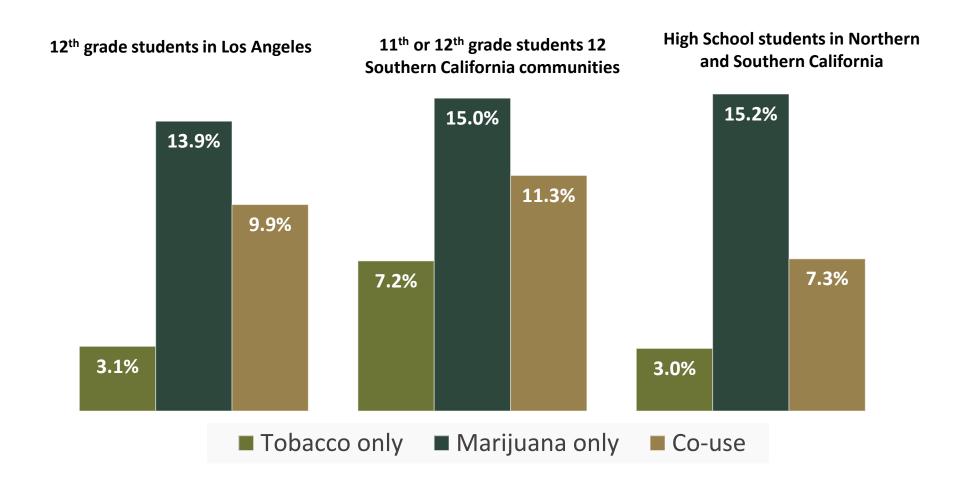
Past 30 days: 20% Daily use: 9.4%



2019 National Youth Cannabis Use (Monitoring the Future)



Past 30-Day Co-Use of Tobacco and Marijuana Use



Youth Vaping and Cannabis

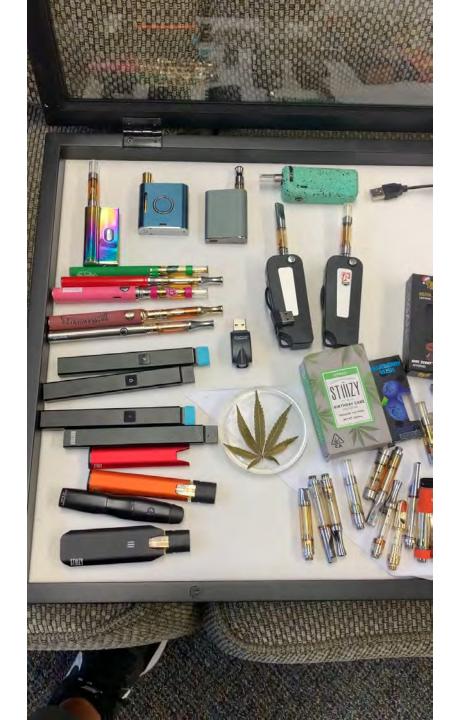


- 33% of high school students who ever used e-cigs reported using cannabis in their e-cigs.
- 23% of middle school students who ever used e-cigs reported using cannabis in their e-cigs.
- Youth who vape are 3.5 times more likely to use cannabis than vape-free youth.













What's in E-Cigs?



Which Chemicals Are Found in E-Cig/Pod-Based Aerosol?

- Propylene glycol
- Glycerin
- Flavorings (many)
- Nicotine
- NNN
- NNK
- NAB
- NAT
- Ethylbenzene
- Benzene
- Xylene
- Toluene
- Acetaldehyde
- Formaldehyde
- Naphthalene
- Styrene
- Benzo(b)fluoranthen

- Chlorobenzene
- Crotonaldehyde
- Propionaldehyde
- Benzaldehyde
- Valeric acid
- Hexanal
- Fluorine
- Anthracene
- Pyrene
- Acenaphthylene
- Acenapthene
- Fluoranthene
- Benz(a)anthracene
- Chrysene
- Retene
- · Benzo(a)pyrene
- Indeno(1,2,3cd)pyrene

- Benzo(ghi)perylene
- Acetone
- Acrolein
- Silver
- Nickel
- Tin
- Sodium
- Strontium
- Barium
- Aluminum
- Chromium
- Boron
- Copper
- Selenium
- Arsenic
- Nitrosamines
- Polycyclic aromatic hydrocarbons

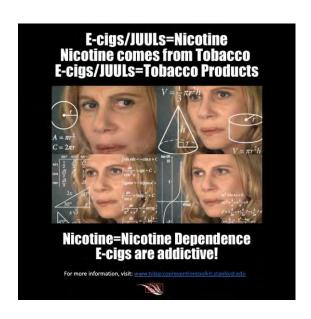
- Cadmium
- Silicon
- Lithium
- Lead
- Magnesium
- Manganese
- Potassium
- Titanium
- Zinc
- Zirconium
- Calcium
- Iron
- Sulfur
- Vanadium
- Cobalt
- Rubidium

E-Cigs = Tobacco











th Children's Hospital

Cigs in a Pod

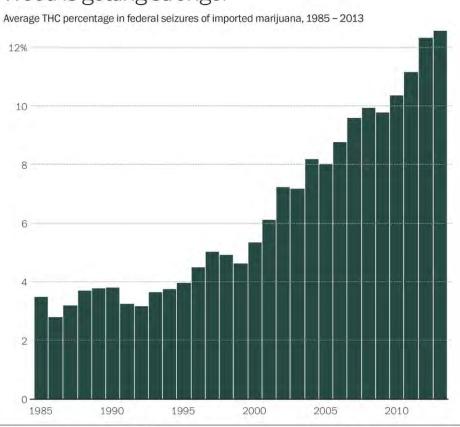




THC Concerns

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Weed is getting stronger



- Different methods, different risks
- Difficult to determine the amount of THC being consumed

WASHINGTONPOST.COM/WONKBLOG

Source: White House Office of Nat'l Drug Control Policy

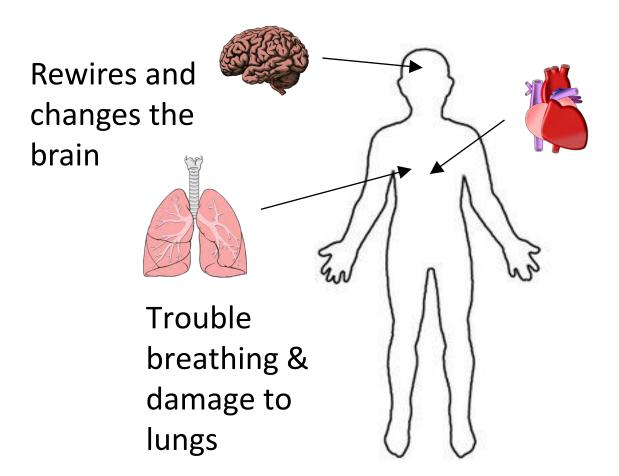




Why Are We Concerned?



The Body When Vaping



Heart beats faster due to "fight or flight" response



Nicotine Effects





- > Highly addictive substance
- Causes changes in brain chemistry stimulates pleasure centers, alters normal brain function
- ➤ As nicotine levels in the brain drop, the brain craves nicotine to feel pleasure and relieve feelings of anxiety and stress (withdrawal)



Nicotine Effects

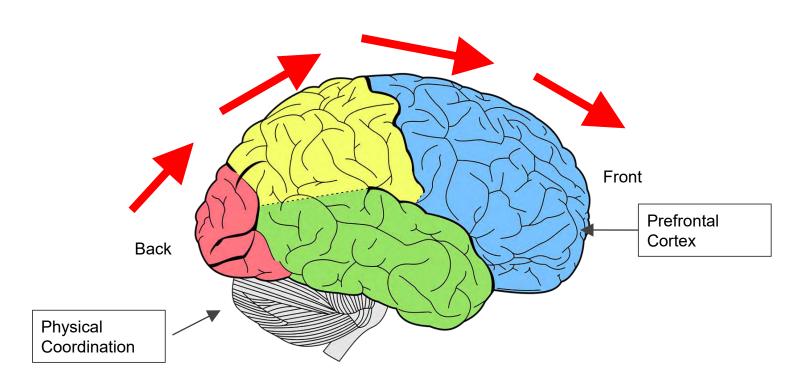




- Slows development of learning, memory, attention and behavior
- Mood disorders like anxiety and depression
- Permanent lowering of impulse control
- Increased risk of other addictions

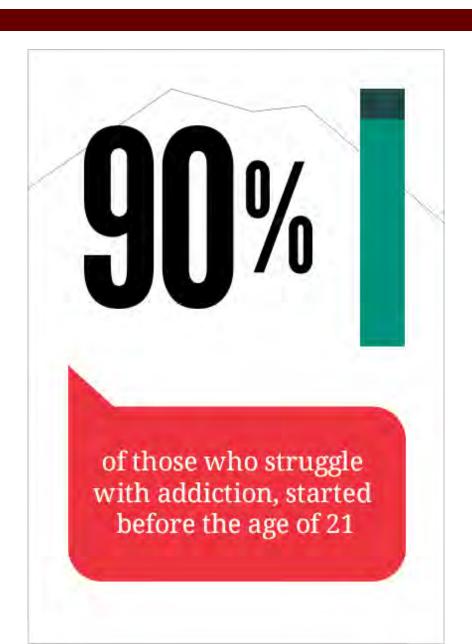


The Adolescent Brain



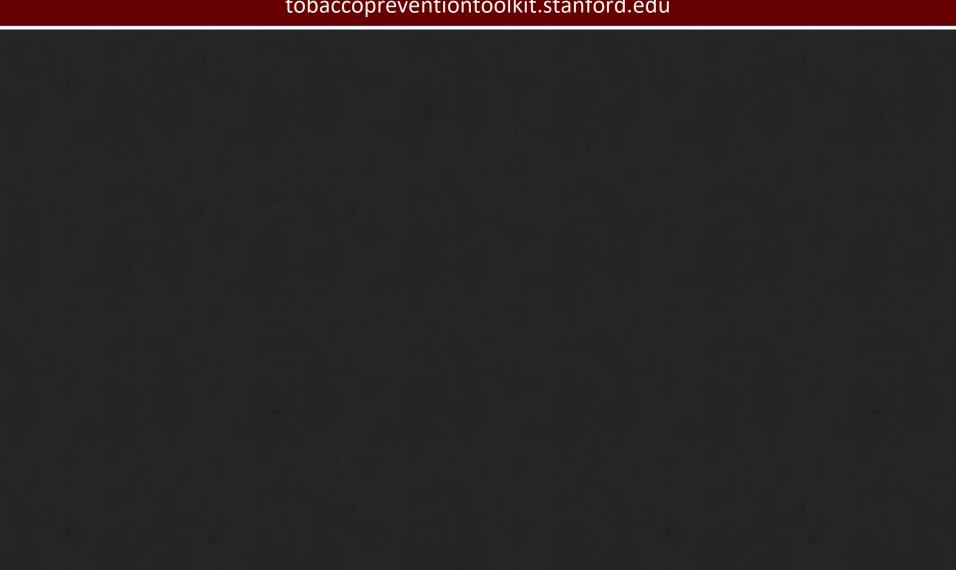


Addiction

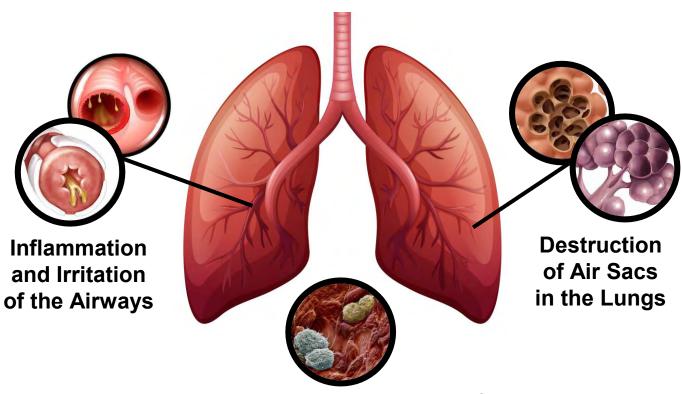


Understanding Addiction as a Disease (Wait21)

to baccoprevention to olk it. stanford. edu



Tobacco and the Lungs



Weaker Immune Response to Infection

Pulmonary Effects

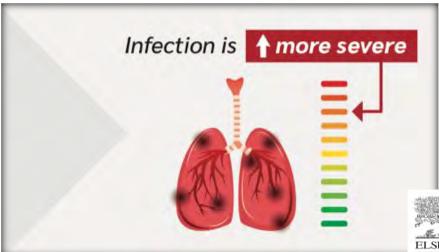


- Inhaled flavorings associated with (animal and human models):
 - Respiratory illness/bronchitis
 - Life-threatening respiratory failure
- Largely due to diacetyl, a buttery flavoring agent used in microwaveable popcorn
 - Generally Recognized as Safe (GRAS) for oral but not inhalation



Smoking/Vaping & COVID-19





- Lungs weakened from breathing in smoke or aerosol
- Novel coronavirus attacks the lungs
- Weakened lungs at greater risk for attack and more severe infection
- Also, bringing hand to mouth or sharing



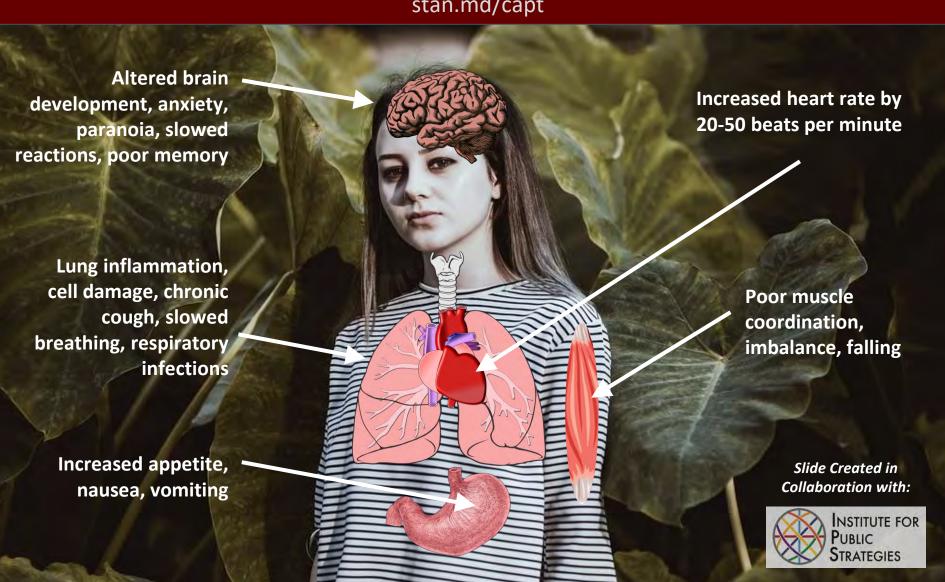
Original article

Association Between Youth Smoking, Electronic Cigarette Use, and COVID-19



The Body on Cannabis

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Cannabis & The Brain





- Addiction!
- Impaired learning, memory, attention, impulse control, decision-making
- Lower academic performance
- Loss of IQ Points with repeated use
- Sleep issues
- The higher the dose and more regular the use, the greater the impairment
- Brain impairment in youth does not resolve with abstinence

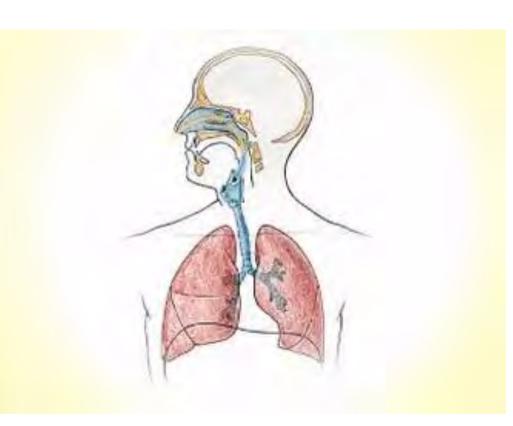
Marijuana & Respiratory Health



- Cough
- Phlegm
- Lung illness
- Lung infection
- Cannabis use impairs function of immune cells in lungs
- ?? Lung cancer??
- More human research needed to know the impact of marijuana use on respiratory health of youth, but studies show: NOT good



Inhalation

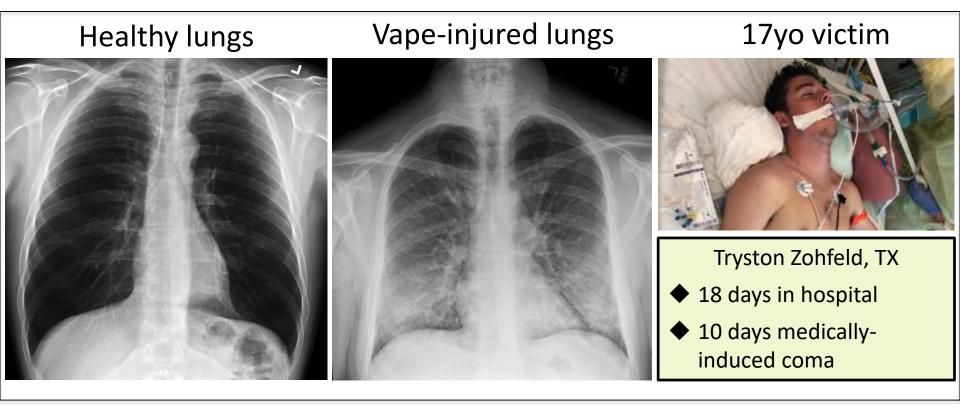


- Marijuana smoke is from biomass combustion, has 1000s of chemicals including fine particles
- Smoke is inhaled deep into the lungs
- Damages the respiratory system
- Blunts introduce nicotine, which is extremely addictive
- "Vaping" marijuana is not a safe alternative



Marijuana & Respiratory Illness

E-cigarette, or **V**aping, product use **A**ssociated **L**ung **I**njury (EVALI)



Vaping-related Lung Illness



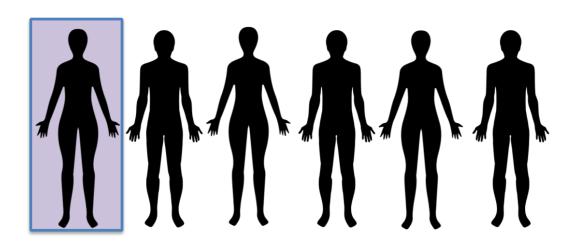
As of **February 18, 2020**:

- 2,807 cases of e-cigarette, or vaping, product use associated lung injury (EVALI)
- 68 deaths in 29 states and the District of Columbia
- THC in most devices, but not all
- Vitamin E acetate is of concern



Fact or Opinion: Cannabis can be addictive.

Fact



1 out of 6 youth users become addicted

Cannabis and Suicidality



In youth (<18) and young adults (18-24), cannabis use associated with:

- 50% increased risk of suicidal ideation
- 3.5% increased risk of suicide attempt







Secondhand and Thirdhand Aerosol/Smoke



Secondhand smoke is known

Secondhand smoke causes the premature death of 41,000 adults and more than 400 infants each year.

Secondhand smoke contains more than 7,000 chemical compounds.



Dogs and cats are twice as likely to develop nasal cancer if their owner smokes as compared to animals in households without cigarette smoking.

to cause cancer in humans and

animals.

Some known carcinogens found in secondhand smoke:

arsenic

[used in pesticides]

lead (formerly found in paint)

polonium-210 la radioactive element)

formaldelivde

benzene (a gasoline additive)

lused to embalm the dead

of Americans are not protected by smoke-free laws. Only 28 states and territories have enacted comprehensive smoke-free laws.



of youth who live with a smoker have been exposed to secondhand smoke.



Clean indoor air

laws reduce nonsmokers' secondhand smoke exposure by 28%.



Lower-income communities are less likely to be protected by smoke-free laws.

Blue-collar workers are more likely to be exposed to secondhand smoke at work.

Secondhand Aerosol

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Nicotine

Heavy Metals

Ultrafine Particles

Cancerous Chemicals

VOCs

Thirdhand Smoke

to baccoprevention to olk it. stanford. edu



Marijuana & Secondhand Smoke



- Contains cadmium, chromium, benzene
- 33+ on Prop 65 list of toxins
- Harmful effects on cardiovascular system
- Exposed children have detectable levels of THC
- Exposure also associated with headaches, dry mouth, coughing breathing issues, ear infections, asthma and eczema...



Wilson et al., Pediatrics, 2018





Why Youth Use Tobacco?



Why Youth Use E-cigarettes

- Flavors
- Easy to hide
- Marketing
- Access
- Misperceptions

Why Youth Use E-cigarettes

- Flavors
- Easy to hide
- Marketing
- Access
- Misperceptions

NYTS 2020



- High School Youth
 - 87.4% (2.53 million) used flavored e-cigarettes
 - Fruit: 73.1% (1.82 million)
 - Mint: 55.8% (1.39 million)
 - Menthol: 37% (920,000)
 - Candy, desserts, other sweets: 36.4% (910,000)
- Middle School Youth
 - 73.9% (400,000) used flavored e-cigarettes
 - Fruit: 75.6% (290,000)
 - Candy, desserts, other sweets: 47.2% (180,000)
 - Mint: 46.5% (180,000)
 - Menthol: 23.5% (90,000)



Flavors



- Flavors mask the harsh taste of the tobacco
- Flavors mask the smell of tobacco and make them easier to hide
- Flavors mask the risks of the tobacco product
- Youth are more likely to report interest in trying tobacco if flavored

Flavors



- Youth report they would quit if flavors weren't available
- Ads and packaging of flavored tobacco products are appealing to youth
- Youth are looking for flavors, in any product, and will switch products to get flavors.



Flavors of Vapes







556000

tobacco flavors and counting

What's Your Taste'

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









Why Youth Use E-cigarettes

- Flavors
- Easy to hide
- Marketing
- Access
- Misperceptions















Why Youth Use E-cigarettes

- Flavors
- Easy to hide
- Marketing
- Access
- Misperceptions

How Much is That?





5% strength of what?

How much is 5%?



























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



Youth-Focused Ads

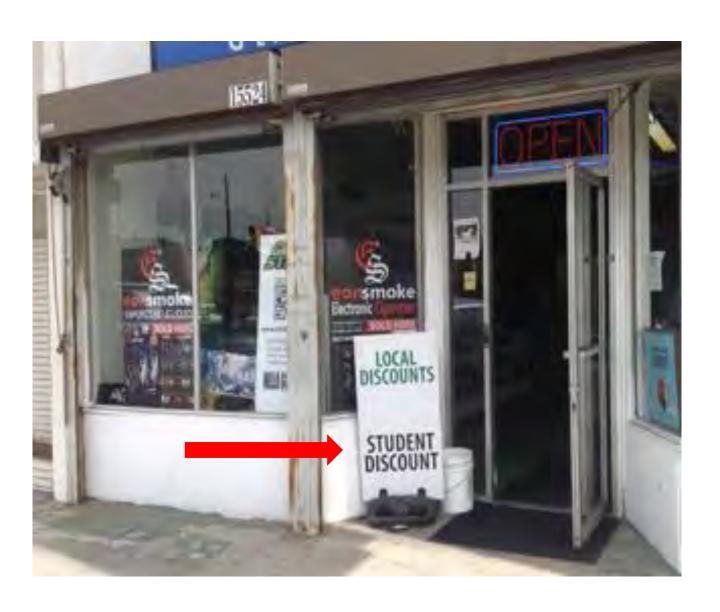




Why Youth Use E-cigarettes

- Flavors
- Easy to hide
- Marketing
- Access
- Misperceptions

Access



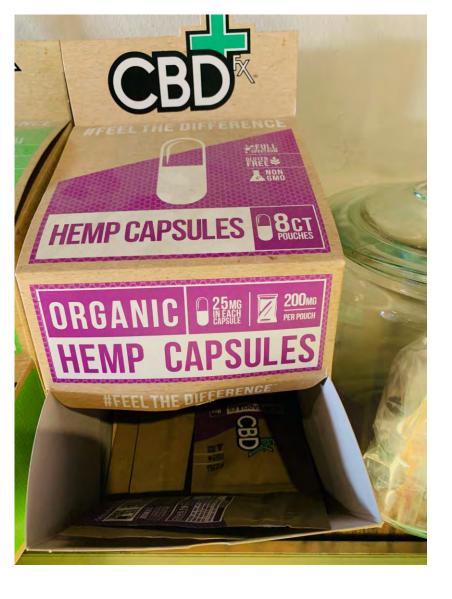














Why Youth Use E-cigarettes

- Flavors
- Easy to hide
- Marketing
- Access
- Misperceptions



Contents lists available at ScienceDirect

Preventive Medicine

journal homepage: www.elsevier.com/locate/ypmed



Adolescents perceive ecigarettes to be less risky and less addictive compared to all other tobacco products.

and delicits dilici Across Todacco Products

Maria Roditis, Ph.D. a, Kevin Delucchi, Ph.D. b, David Cash a, and Bonnie Halpern-Felsher, Ph.D. a,*

Article history: Received August 31, 2015; Accepted January 27, 2016

Keywords: Tobacco use; Risk perceptions; Decision making

^a Division of Adolescent Medicine, School of Medicine, Stanford University, Palo Alto, California

^b Department of Psychiatry, University of California San Francisco, San Francisco, California





Summary



Summary: Perfect Storm to Addict Youth



- Stealth/youth-focused products
- Very high nicotine levels
- Salt-based \rightarrow less throat hit, easier to use
- Misperceptions of nicotine and harms
- Flavors
- Packaging, ads
- Cheap!
- HARMFUL





In short:

We must protect the lungs and brains of our youth!







What You Can Do / Resources



Overall Recommendations



- Talk about tobacco
- Never smoke or use e-cigarettes in the house, car, or places where children and adolescents spend time
- Talk with a healthcare provider about ways to help you quit tobacco products
- If you are an e-cigarette user, always keep ecigarettes and liquid nicotine locked and out of reach of children and adolescents

Starting the Conversation



- Goal: to have a conversation, not a lecture
 - Find the "right time"
 - Be patient and ready to listen
 - Avoid criticism and encourage open dialogue
- Avoid "we need to talk," instead "What do you think about..."
- Avoid "you don't vape, right..."
- Use the right words! (vaping, Juuling)
- Continue the conversation
 - In-person, or via text/email, etc.
 - Sharing articles is a great way to stay engaged



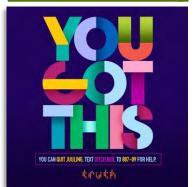
E-Cigarette Resources

Become An Ex



Tobacco and vaping cessation support for parents and teens from Truth Initiative

This is Quitting



Includes a texting service for vaping cessation support from Truth Initiative

The Vape Talk



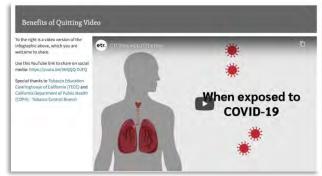
Includes a conversation guide for parents and teens from American Lung Association

Surgeon General



Includes a conversation guide and video for parents and teens from FDA; resources in Spanish

Tobacco Prevention Toolkit





Includes a number of resources to help talk to youth, to recognize and help with addiction, and more

Tobacco Prevention Toolkit Tobaccopreventiontoolkit. Stanford. edu









Cannabis Remote-Learning Curriculum

A free curriculum for teaching students remotely about the harms of using cannabis







Teach Topic 1: What We Know About Cannabis

Teach Topic 2: Health Outcomes of Cannabis Use

Teach Topic 3: High On Life/Cannabis-Free



Vaping Prevention Online Course

A free course for teaching students remotely about the harms of vaping



Teach Module 1: A Real Intro to E-Cigarettes



Teach Module 2: All of the Chemicals



Teach Module 3: What's the Damage



Teach Module 4: Central Problem of E-Cig Usage



Teach Module 5: What Are They Selling



Alternative Module:











Cannabis Curriculum

Healthy Futures









Thank you!

Bonnie.halpernfelsher@Stanford.edu



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