THE TRIANGULUM OF CANNABIS, TOBACCO, AND E-CIGARETTE USE:

Its Effects on Physical Health, Addiction, and Mental Health, and How You Can Best Help



CDE TUPE

We gratefully acknowledge the support of the California Department of Education Tobacco Use Prevention Education program for this project. The contents do not necessarily reflect the position or policy of the CDE.

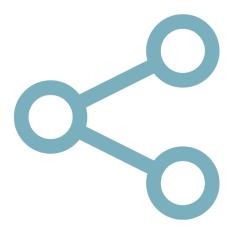




For higher quality audio, dial the number from your webinar invitation link



The webinar is being recorded



Supporting materials will be shared

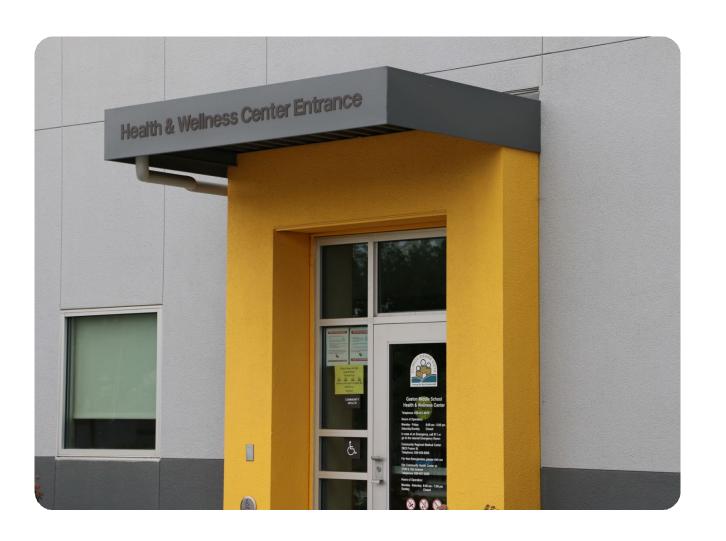


PUTTING HEALTH CARE IN SCHOOLS

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



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Bonnie Halpern-Felsher, PhD, FSAHM

Marron and Mary Elizabeth Kendrick Professor in Pediatrics II
Director, Stanford REACH Lab



Reach Lab

The Triangulum of Cannabis, Tobacco, and E-cigarette Use: Its Effects on Physical Health, Addiction, and Mental Health, and How You Can Best Help

Bonnie Halpern-Felsher, PhD, FSAHM

Marron and Mary Elizabeth Kendrick Professor

in Pediatrics II

Founder & Executive Director, REACH Lab and Curriculums

The REACH Lab





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REACH Youth Action Board (YAB)



Reach Lab



SPECIAL THANKS TO OUR SPONSORS











Office of Addiction **Services and Supports**







EDUCATION







HAWAI'I COMMUNITY **FOUNDATION**





COUNTY OF SANTA CLARA **Behavioral Health Services**





MATERNAL & CHILD HEALTH RESEARCH INSTITUTE

CASA – Los Gatos





Tobacco/Nicotine Products





Oral Nicotine Products

Pouches



Gums



Tablets & Lozenges



Contents lists available at ScienceDirect

Addictive Behaviors

Addictive Behaviors

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

Check for updates

Use, marketing, and appeal of oral nicotine products among adolescents, young adults, and adults

Shivani Mathur Gaiha a, Crystal Lin , Lauren Kass Lempert b, Bonnie Halpern-Felsher , Bonnie Halpern-Felsher

* Stanford REACH Lab, Division of Adolescent Medicine, Department of Pediatrics, Stanford University, CA, USA
b Center for Tobacco Control Research and Education, University of California, San Francisco, USA

Toothpicks







Preventive Medicine 185 (2024) 108068



Contents lists available at ScienceDirect

Preventive Medicine



Correspondence

Popularity of Zyn and other nicotine pouch brands among U.S. adolescents, young adults, and adults in 2021







Cannabis Products



Cannabis Products

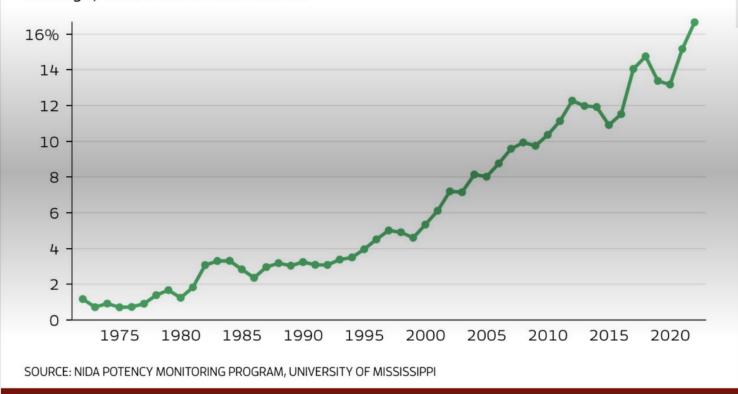




THC Concerns

Today's cannabis is a lot stronger than its predecessors

Cannabis available today contains more than 10 times as much **THC**, on average, than it did in the 1970s



- Todays 1 joint ="yesterday's" 10 joints
- Different methods, different risks
- Difficult to determine the amount of THC being consumed

Delta 8 Cannabis

- Synthetic form of cannabis
- Less potent form of cannabis, derived from hemp
 - Extracting the THC from the hemp plant



Hemp

- Plant in the botanical class of Cannabis sativa
- Very low THC levels
- Used for fibers, creams, and other goods
- Legal in its natural form
- Edible hemp products are legal to sell and use with no age limit, if derived from raw hemp with THC less than 0.3%
- Inhaled hemp illegal in CA



Intoxicating Hemp

- Chemically altered to increase the THC levels
 - to intoxicating levels, similar to Delta 9 cannabis
- Inhalable and edible forms
- Because derived from legal hemp, the regulation of intoxicating hemp has been vague; many loopholes



Co-Use of Cannabis and Tobacco



What is Co-Use?



- Use of cannabis and tobacco at the same time
- Use of cannabis and tobacco within a short period of time (chasing)

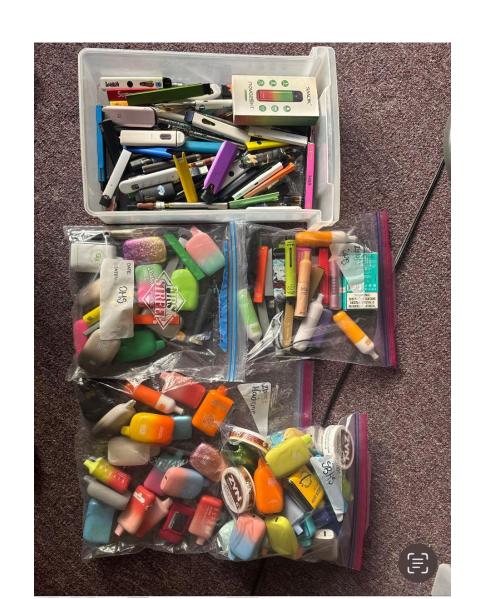
Ever or past 30-day use of both types of products







Photo from a CA County



Rates of Co-Use

- Past 30-day co-use of tobacco and cannabis is highly prevalent
- 5-30% of adolescents and young adults (AYAs) in the United States engage in co-use
- Some studies suggest co-use is more prevalent than sole-use of either tobacco or cannabis



Addictive Behaviors 158 (2024) 108105



Contents lists available at ScienceDirect

Addictive Behaviors

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

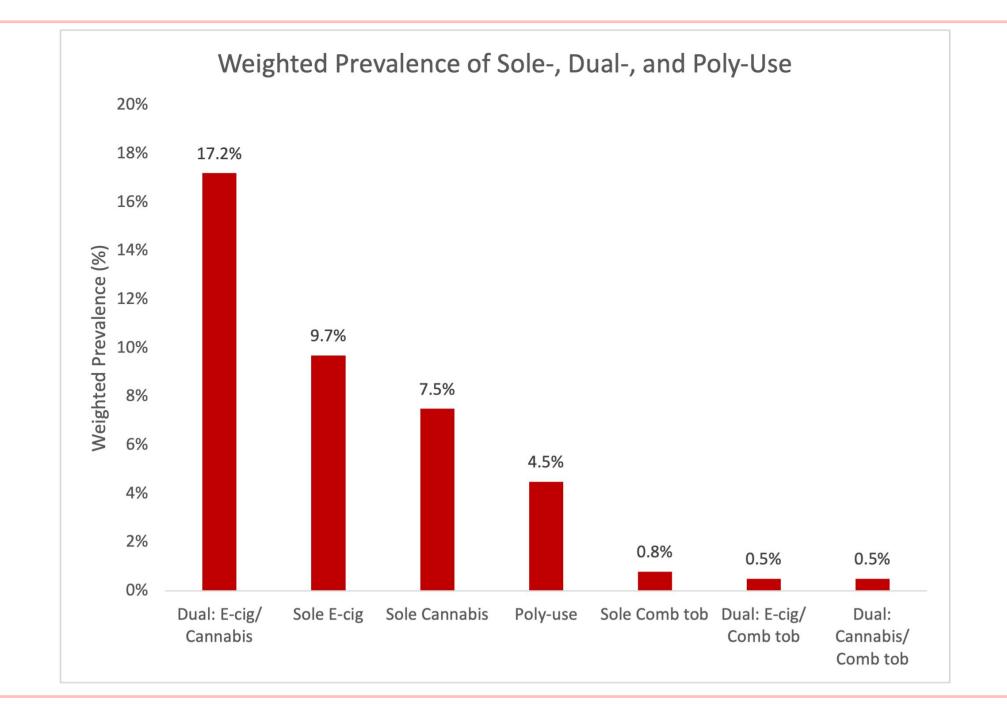


REACH Lab

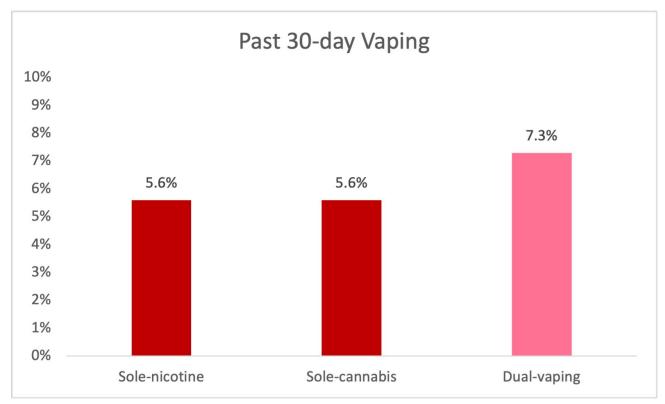
Products and patterns through which adolescents, young adults, and adults initiate co-use of tobacco and cannabis

Devin M. McCauley ^a, Jessica Liu ^a, Shivani Mathur Gaiha ^{a,b,c}, Bonnie Halpern-Felsher ^{a,*}

- Among a national sample of 13-40 year olds:
 - 38.4% reported use of both tobacco and cannabis in the past 30 days.
 - 70.9% used tobacco first in their lifetime (66.6% < 21; 71.7% 21–24; 76.6% > 24).
 - 60% who initiated co-use with tobacco reported nicotine e-cigarettes as their first tobacco product (63.3% < 21; 66.7% 21–24; 49.6% > 24).

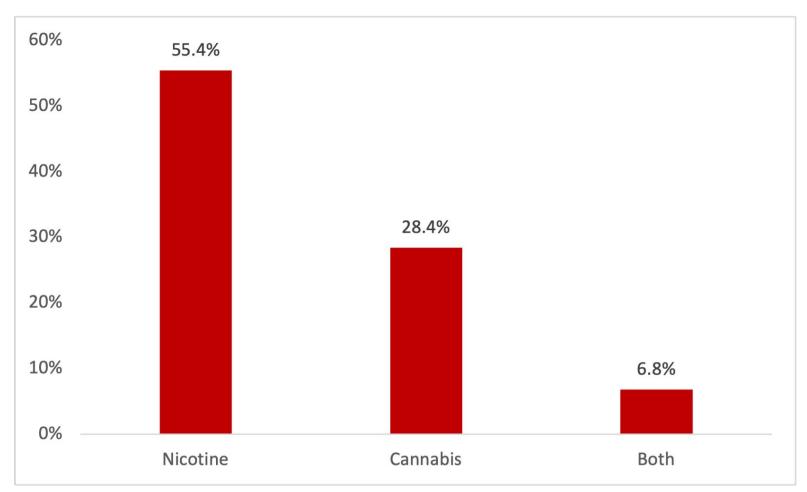


Vaping Prevalence (N=2013 Participant Observations)



Of the participants that reported past 30-day vaping, over one-third (38.8%) reported dual-vaping

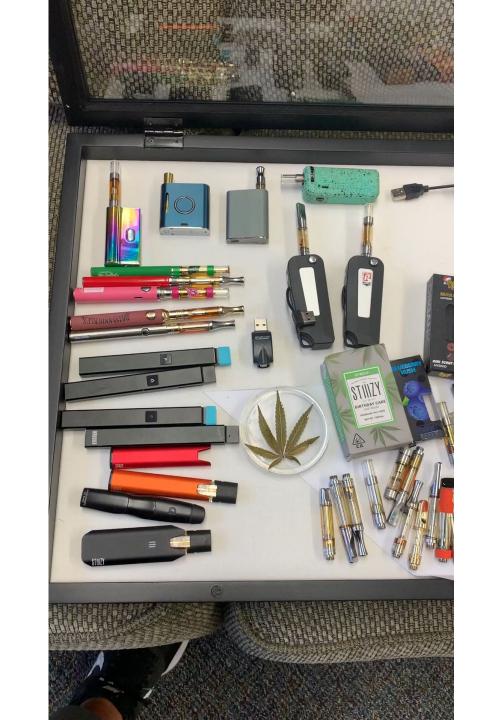
Which Substance Vaped First, Among those who Reported Dual-vaping (n=74)



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.





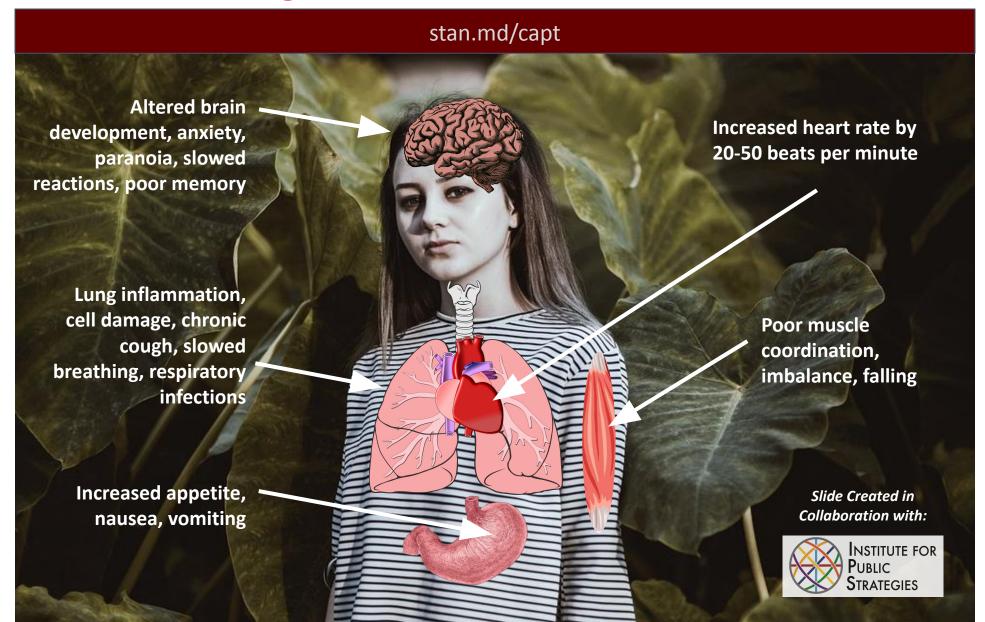




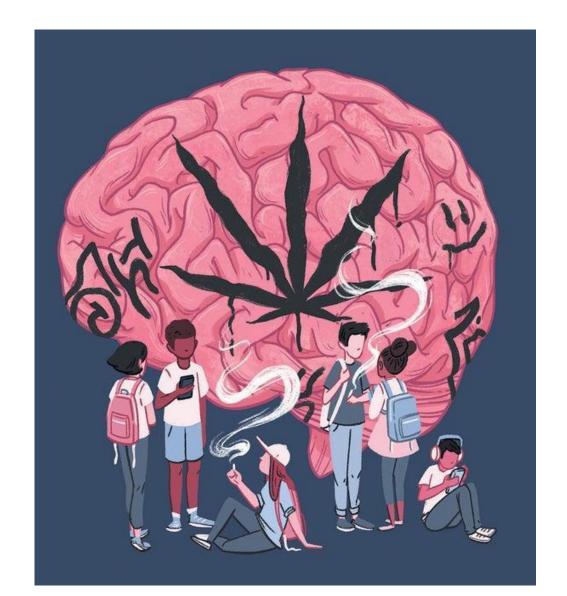
Health Effects



The Body on Cannabis/Tobacco

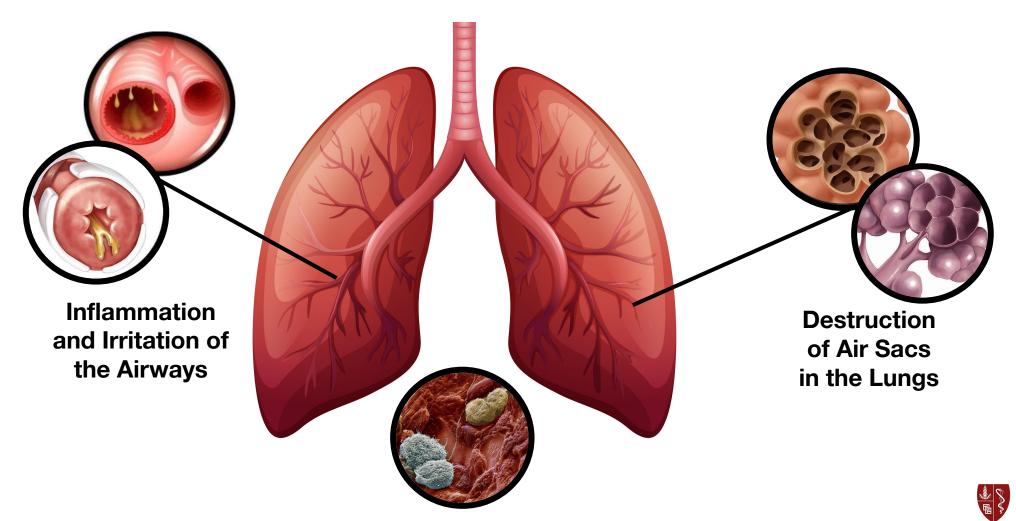


Drugs and The Brain



- 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

Tobacco/Cannabis and the Lungs



Weaker Immune Response to Infection

Stanford MEDICINE

Reach Lab

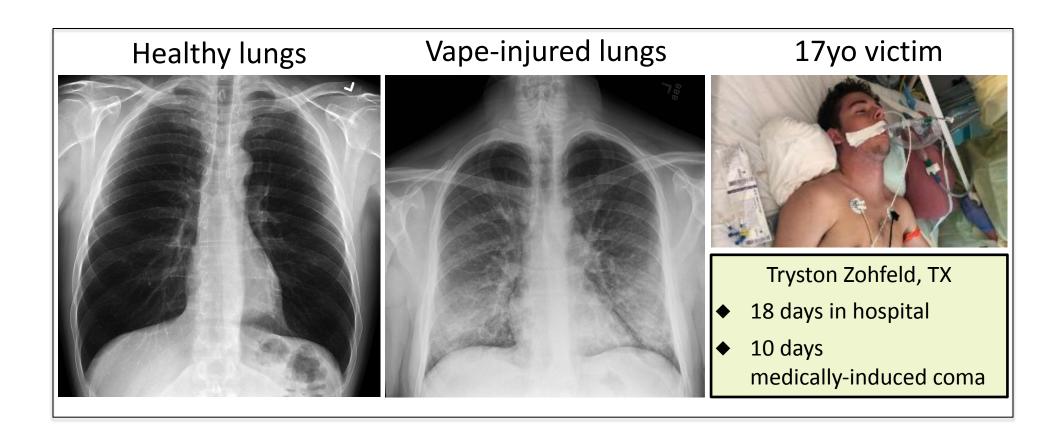
Pulmonary Effects

- 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



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



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 products increases risk



Cannabis Hyperemesis Syndrome

- Vomiting and abdominal pain
- Caused by long term use
- Symptoms ease in a couple days unless marijuana use resumed



Cannabis and Mental Health

- Hallucinations and paranoia
- Depression and anxiety
- Cannabis use associated with 2-3 times increased risk of psychosis (schizophrenia)
- Younger people at higher risk than adults



New Study: Co-Use and Mental Health

- Nearly 1 in 3 reported past 30-day co-use and half screened positive for depression
- Screening positive for depression was more likely among:
 - Past 30-day co-users versus tobacco-only or cannabis-only users.
 - Past 30-day e-cigarette, cigarette, chewed tobacco, and blunt users.
- Those who were depressed commonly used nicotine e-cigarettes and smoked cannabis.





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 Aerosol/Smoke

tobaccopreventiontoolkit.stanford.edu



Nicotine

Heavy Metals

Ultrafine Particles

VOCs

Cancerous Chemicals



Thirdhand Aerosol/Smoke



Cannabis and 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 breathing issues, ear infections, asthma and eczema



Smoke/Aerosol



Secondhand tobacco smoke / aerosol easily goes from apartment to apartment and location to location

- Walls
- Vents
- Windows
- PipesHallways
- Stairways

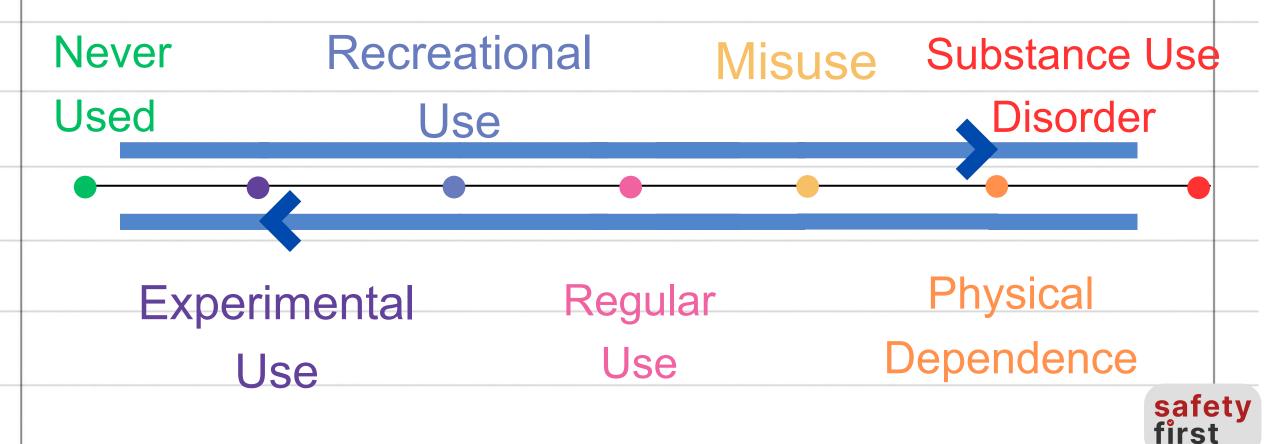




Why Youth Use Drugs?



UNDERSTANDING THE CONTINUUM OF DRUG USE AMONG TEENS





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Decision Theories Applied to Adolescent Risk Behavior

Adolescents Take Risks Because They:

- Cannot judge risks appropriately
- Believe they are invulnerable to harm
- Are pressured by peers
- Have poor decision-making skills

"What are some good things about using ?"



"What are some bad things about <u>not</u> using "



Why Youth Use

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



Why Youth Use E-cigarettes



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

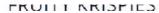








Inford





MOUNTAIN HIGH SUCKERS

CBD ENRICHE TO EDIC

EdiPure

Edipure





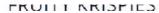








Inford





MOUNTAIN HIGH SUCKERS

CBD ENRICHE TO EDIC

EdiPure

Edipure

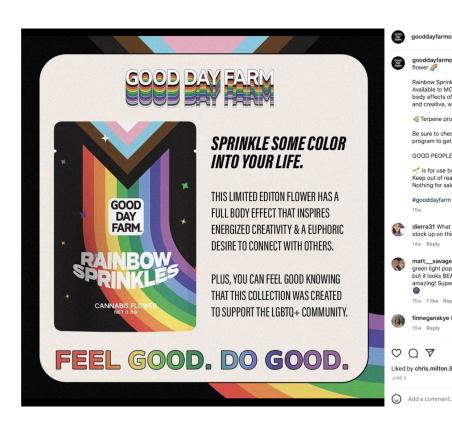


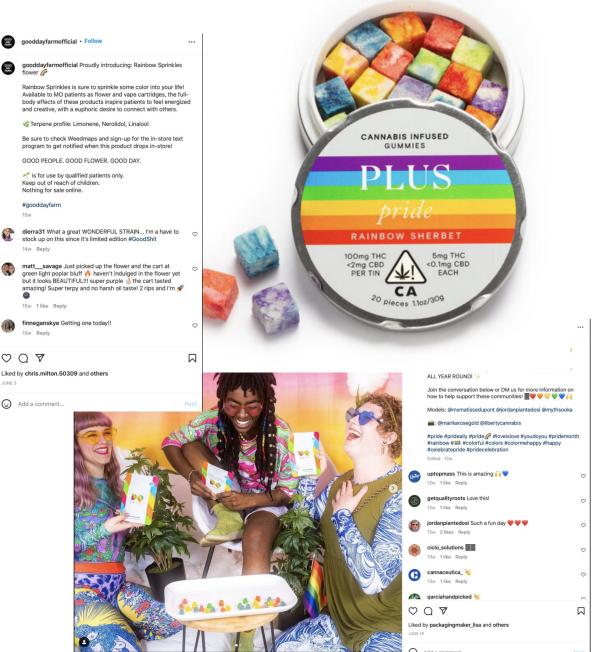




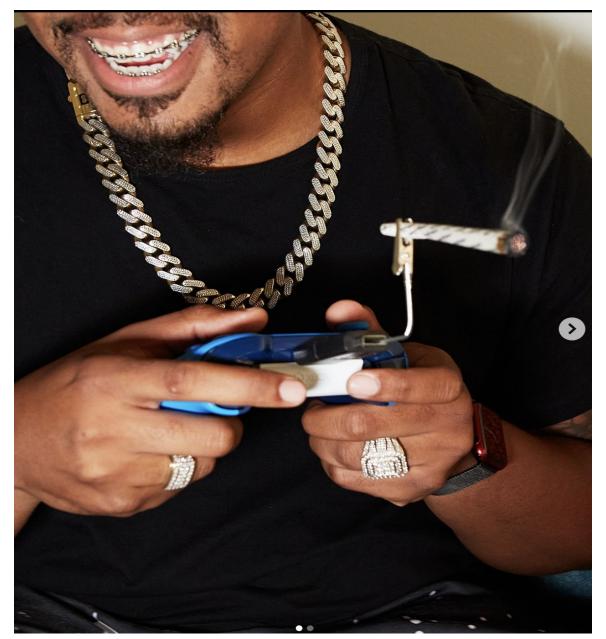


Targeting LGBTQ+





Targeting People of Color



Why Youth Use E-cigarettes



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

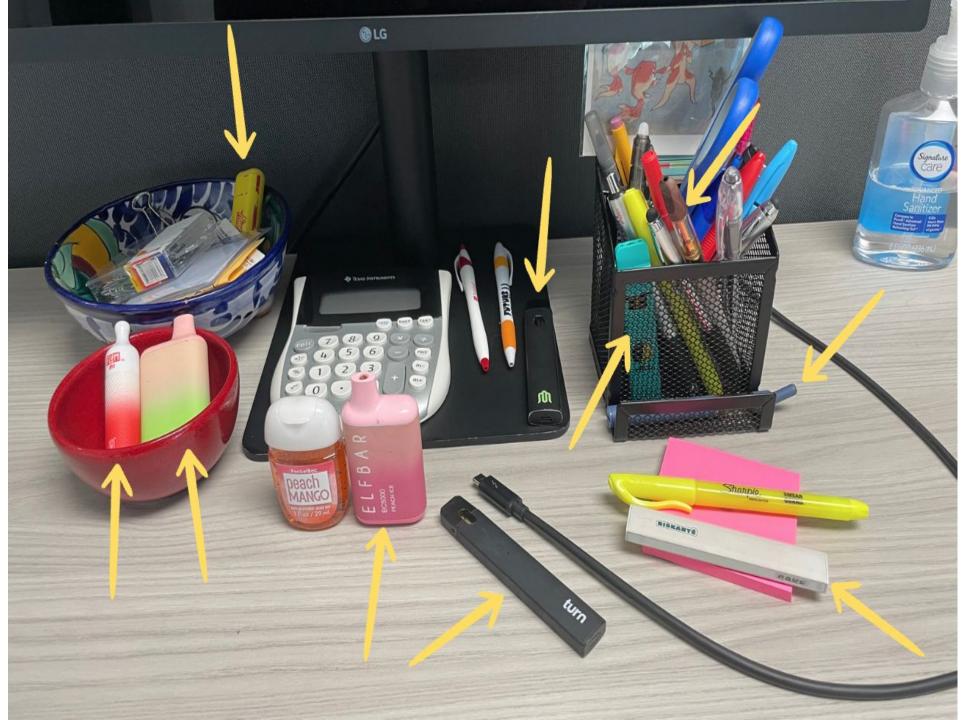








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Why Youth Use E-cigarettes



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





Cannabis (Delta 8, Delta 9, and Hemp) Sold in a CA County









Cannabis (Delta 8, Delta 9, and Hemp) Sold in a CA County









Targeting Youth



















































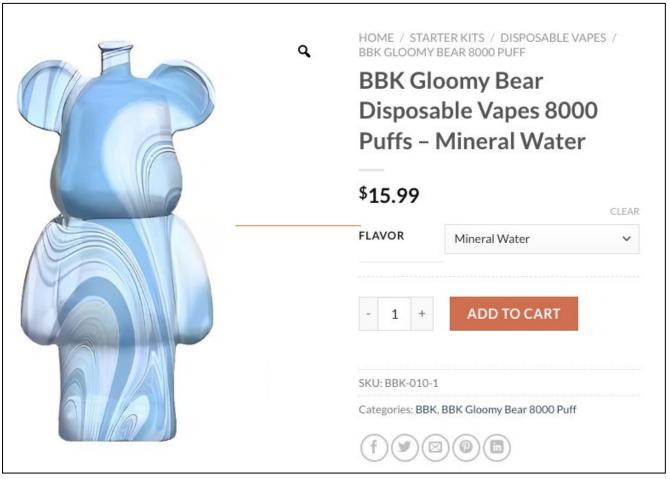


Minions Disposable



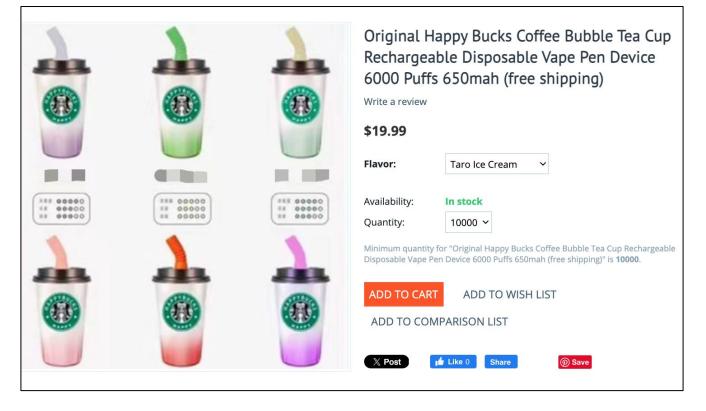






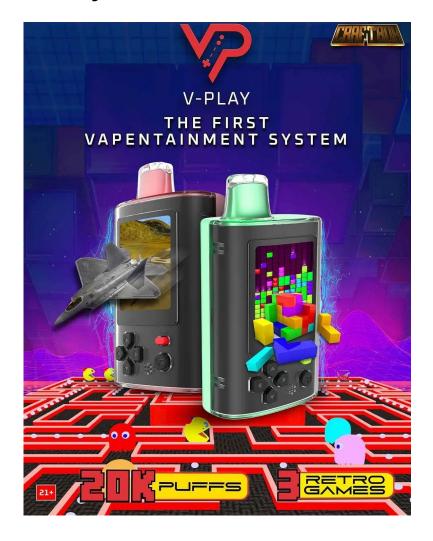
Boba vapes







V-Play: The First VAPENTERTAINMENT System







Description for the Vape device boasts 20,000 puffs, and 1.77 inch screen on which you can play games. Games available on the device include F-22, Pac Maze, & Tetra Stack. The product is available in a number of sweet flavors and the device offers a "beast mode" that delivers a more intense flavor and more vapor.

Why Youth Use E-cigarettes



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





Pop Quiz



What is the Minimum Legal Age to Purchase Tobacco and Cannabis in the U.S.?

16 17 18 19 20 21 22 23 24 25





What is the Minimum Legal Age to Purchase Tobacco and Cannabis in the U.S.?

16 17 18 19 20 21 22 23 24 25





Pop Quiz

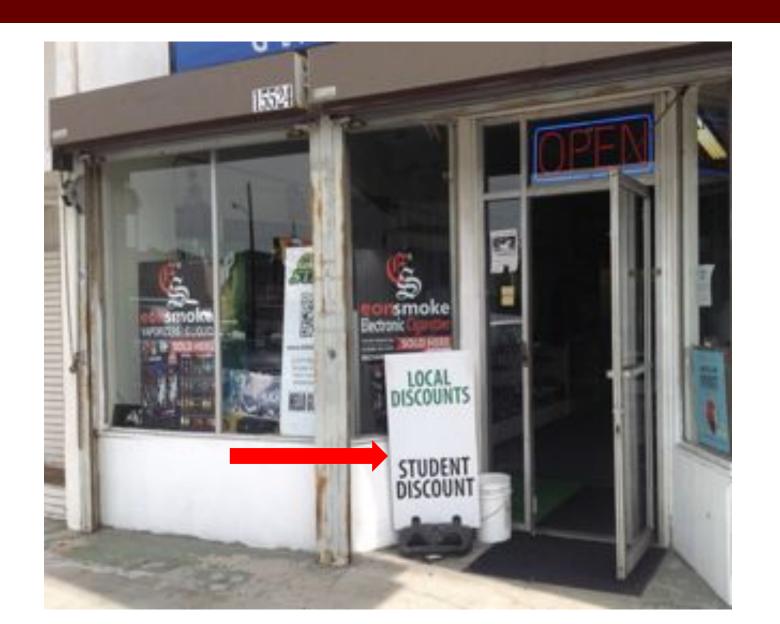
21!!!







Access







The legal age to purchase tobacco/nicotine* in the United States is...



*This includes e-cigarettes, cigarettes, and oral nicotine products like Zyn.



Approximately 2 in 5 people don't know the minimum legal age to purchase tobacco! 1

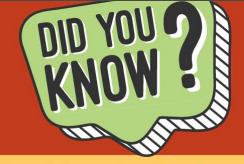
Tobacco 21 is designed to protect YOU-th!



Using tobacco
before age 21
negatively impacts
the brain's
development and
increases risk for
addiction.

ACTION ALERT: Spreading the word about Tobacco 21 can encourage YOU-th to stay tobacco free!

McCauley, D. M. & Halpern-Felsher, B. (In Press). Gaps in awareness of the United States minimum legal age of e-cigarette and cigarette sales: Implications for public health Messaging_lournal of Adolescent Health. https://authors.elsevier.com/a/1juwC,Nz%7ENVg3t



The minimum legal age to purchase tobacco/nicotine in the US is...

*This includes e-cigarettes, cigarettes, and oral nicotine products like Zyn.



1. There is a common misconception that the legal age to purchase tobacco is still 18.



2. Using tobacco before age 21 negatively impacts the brain's development.



3. Helping adolescents gain awareness of Tobacco 21 laws can discourage access and use.



4. Spreading the word to teens about Tobacco 21 can encourage youth to stay tobacco/nicotine free!

McCauley, D. M. & Halpern-Felsher, B. (In Press). Gaps in awareness of the United States minimum legal age of e-cigarette and cigarette sales: Implications for public health Messaging.

Journal of Adolescent Health. https://authors.elsevier.com/a/1juwC,Nz%7ENVg3t.



Why Youth Use E-cigarettes



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





Mental Health Issues



- Youth are incredibly stressed
- •More than 44% of students reported feeling sad or hopeless about themselves in 2021, which is a substantial increase compared to 34% in 2019 (YRBS)
- •25% of high school students expressing suicide ideation (YRBS)
- Youth are more likely to use substances when feeling stressed, depressed, and anxious





Co-Use and Mental Health



- Nearly 1 in 3 reported past 30-day co-use and half screened positive for depression
- Screening positive for depression was more likely among:
 - Past 30-day co-users versus tobacco-only or cannabis-only users.
 - Past 30-day e-cigarette, cigarette, chewed tobacco, and blunt users.
- Those who were depressed commonly used nicotine e-cigarettes and smoked cannabis.

Addictive Behaviors 156 (2024) 108076 Contents lists available at ScienceDirec Addictive Behaviors journal homepage: www.elsevier.com/locate/addictbeh

Depression screening outcomes among adolescents, young adults, and adults reporting past 30-day tobacco and cannabis use

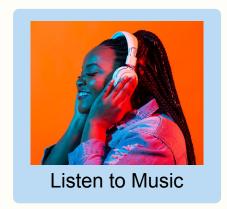
Shivani Mathur Gaiha ^{a, c, d}, Maggie Wang ^b, Mike Baiocchi ^a, Bonnie Halpern-Felsher ^{a, e}

- Stanford REACH Lab, Division of Adolescent Medicine, Department of Pediatrics, Stanford University School of Medicine, CA, United States b Department of Biomedical Data Science, Stanford University, CA, United States
- Division of Adolescent/Young Adult Medicine, Department of Pediatrics, Boston Children's Hospital, Boston, United States
 Faculty of Pediatrics, Harvard Medical School, Boston, United States



Healthy Options for Coping with Stress

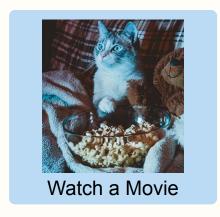
















Drug Use, Stigma, and Mental Health



Stigma: a mark of disgrace or shame associated with a person or group of people.

Stigmas can lead to people being stereotyped and discriminated against.



Summary: Perfect Storm to Addict Youth

- Stealth/youth-focused products
- Very high THC and nicotine levels
- Misperceptions of harms
- Flavors
- Packaging, ads
- . HARMFUL







What Can We Do?

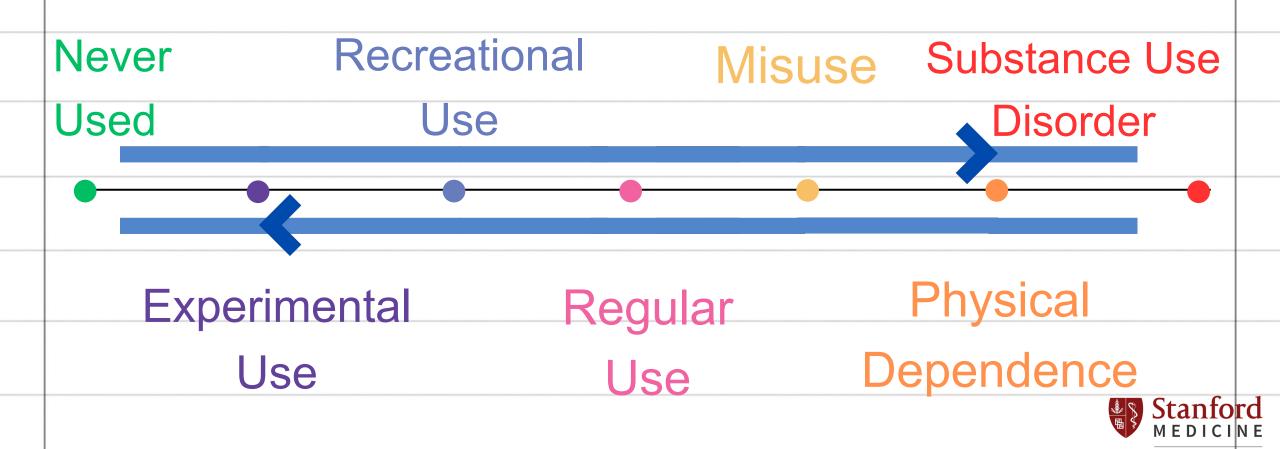


Honest Drug Education

- Based in science
- Based on how adolescent learn and make decisions
- Keep teens safe!



UNDERSTANDING THE CONTINUUM OF DRUG USE AMONG TEENS



Reach Lab

Goal



- Normalize drug education communication not normalize drug use!
- Conversation, not a confrontation! Not a lecture!





Starting the Conversation

- Goal: Have a conversation, not a lecture
 - Find the "right time"
 - Be patient and listen
- Avoid "we need to talk" or "you don't use, right!?!?"
- Use the right words
- Realize that you might not learn immediately whether teen is using; might need more than one conversation

REACH Lab

Halpern-Felsher REACH Lab

Our Team



Research

Publications

Preventions and Interventions

Advocacy

In the News

YAB Corner

Parent Corner

Resources

Marketing and Promotion

Lab Fun



Research

Our research is driven to improve adolescent and young adult (AYA) health by:

- · Conducting interdisciplinary, high-impact research focused on health-related decision-making
- Translating evidence into effective programs that reduce and prevent AYA risk behavior
- · Informing and supporting policies that improve AYA health
- Training the next generation of leaders in AYA health and risk prevention

Current research projects/evaluations:

Understanding the Potential Impact of FDA Authorization and Marketing on Adolescents Young Adults', and Adults' Perceptions, Intentions, and Actual Use of Tobacco (funded by the NIH)

















Stanford REACH Lab offers free curriculums and resources to supplement prevention, education, harm-reduction, interventions and cessation on: vaping/e-cigarettes, cannabis, drugs and other substances. Scan the QR code below to learn more!

PREVENTION, EDUCATION & AWARENESS CURRICULUMS





Smart Talk: Cannabis Prevention & Awareness
Elementary, Middle & High School Curriculum



HARM-REDUCTION & INTERVENTIONS







DATA DASHBOARD FOR EDUCATORS & ADMINISTRATORS

We have developed and launched a data dashboard for educators, where you can see, in **real time**, anonymous student survey responses related to the curriculum and interventions you are implementing.

GET STARTED

or visit tinyurl.com/reachlabdatadashboard



Connect with us and learn more by scanning the QR Code:





 Comprehensive, harm-reduction ·13 lessons Brain and addiction ·Stress, coping, wellness ·Alcohol, opioids/fentanyl, e-cigs, cannabis, hallucinogens, stimulants Marketing







- Nicotine and Cannabis
- Intervention
- •MY and OUR Healthy Futures
- Certificate of Completion

STANFORD REACH LAB'S

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ANNUAL TEACHING CANNABIS (AND OTHER DRUGS!*) AWARENESS AND PREVENTION VIRTUAL CONFERENCE

*TOBACCO/NICOTINE, FENTANYL/OPIODS, ALCOHOL, HALLUCINOGENS, AND OTHER SUBSTANCES!

REGISTER PARENT O D A Y

scan the QR or click the link below: cvent.me/b43GRA

APRIL 9TH - 10TH, 2025 8:00 A.M. - 2:30 P.M. (PST)

REGISTRATION COST

- ► Early Bird: \$125 (ends February 1st)
- ► Regular: \$150 (after February 1*)

WHAT YOU WILL LEARN

Tune in to learn about how to work with current youth users, health effects, successful prevention strategies (including harm-reduction), advocacy, new curriculums, and the latest research on cannabis and other drugs. Registration for this conference will include access to ALL workshops and materials for one year after the conference.

WHO SHOULD ATTEND?

- Educators
- Tupe Coordinators
- Community-based Organizations
- School Administrators
- Health care Providers
- School Resource Officers
- Parents
- Counselors
- · Anyone working with youth



DAY 1 & 2 WELCOME & OPENING DEMARKS

Patricia Zuber-Wilson

BA, Associate Commissioner for the Division of Prevention at the NYS Office of Addiction Services and Supports (OASAS)



DAY 1 KEYNOTE

Christopher M. Jones

PharmD, DrPH, MPH, CAPT, US Public Health Service, Director, Center for Substance Abuse & Mental Health Administration, U.S. Department of Health & Human Services



DAY 2 KEYNOTE

Jason R. Kilmer

PhD, Professor, Psychiatry & Behavioral Sciences Adjunct Professor, Psychology University of Washington

This activity is approved for AMA PRA Category 1 Credits™, ANCC Contact Hours, ASWB Continuing Education (ACE) Credits, APA Continuing Education credits by the Stanford University School of Medicine.

For CME information, accreditation and disclosure information, please visit: https://stanford.cloud-cme.com/2025cannabisawareness

For additional credit types including CEU and CHES*/MCHES* information, please visit our website.

*For all credit types, live attendance at this virtual conference is required. For eligibility and pricing, please visit our website.

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For any questions or concerns, please e-mail us at canprevtoolkit@stanford.edu.

Follow us on Social Media!



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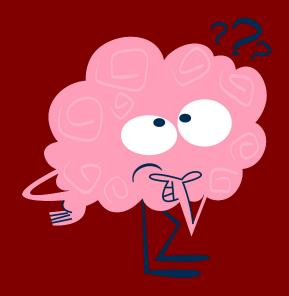


@Stanford REACH Lab

@Stanford Medicine's REACH Lab



Thank you! Any Questions







bonnieh@stanford.edu

ACEs LEARNING COMMUNITY

- CSHA launching an ACEs Learning Community for SBHCs
- Opportunity to integrate ACE screening and response in SBHCs
- Grants of up to \$10,000 available
- Webinars, collaborative learning, and individualized technical assistance offered
- SBHC must have MediCal providers, and be interested in piloting or launching
 ACE screening

Learn more at this <u>link</u>.

ACEs Aware Learning Community for SBHCs Application

Deadline: Nov 9, 2024







UPCOMING CSHA WEBINARS

Building Vaccine Confidence & Addressing Vaccine Hesitancy

- Tuesday, November 19, 10:30-11:30 am Pacific
- Registration Link

Wellness Coaches in Action: New Opportunities for SBHCs & Wellness Centers

- Thursday, November 21, 2:00-3:00 pm Pacific
- Registration Link

CATCH My Breath Youth Vaping Prevention

- Tuesday, December 3rd 2024, 10:00 11:00AM Pacific
- Registration Link

FREE RESOURCES AVAILABLE





https://www.schoolhealthcen ters.org/about-us/our-work/



VISION TO REALITY

From Vision to Reality, our toolkit on starting a school-based health center (SBHC), is a comprehensive resource for anyone seeking to expand health services for students.



KEY STEPS TO PLANNING

The first steps of establishing a new school-based health and wellness center can feel daunting. Our Key Steps to Planning overview outlines the high-level activities to get started.



BEST PRACTICES CHECKLIST

The Best Practices Checklist is designed to help school-based health and wellness center staff identify areas where they can strengthen their practices and improve the quality and sustainability of services.

STAY CONNECTED

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