

Risk Factors and Health Consequences of Youth and Adult Vaping



Erin A. Vogel
Assistant Professor
TSET Health Promotion Research Center, Department of Pediatrics
University of Oklahoma Health Sciences Center (OUHSC)

Katelyn F. Romm
Assistant Professor
TSET Health Promotion Research Center, Department of Pediatrics
University of Oklahoma Health Sciences Center (OUHSC)

TSET Health Promotion Research Center

Objectives

1. To identify the risk factors contributing to vaping among youth and young adults.
2. To recognize the signs and risks of youth and young adult vaping.
3. To examine the risks of vaping and potential harm reduction benefits of vaping for adults who smoke.
4. To explore strategies for initiating nuanced conversations around vaping and vaping cessation with patients.

TSET Health Promotion Research Center

What is vaping?

Liquid (“e-liquid”) is heated to form an aerosol, which users inhale.

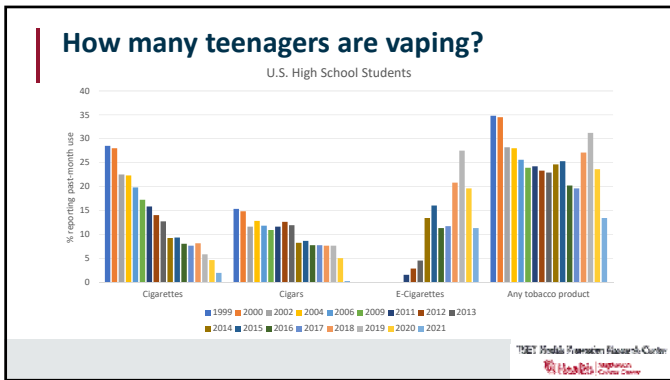
E-liquids come in flavors that appeal to kids and teens, such as fruit, mint, and candy flavors.

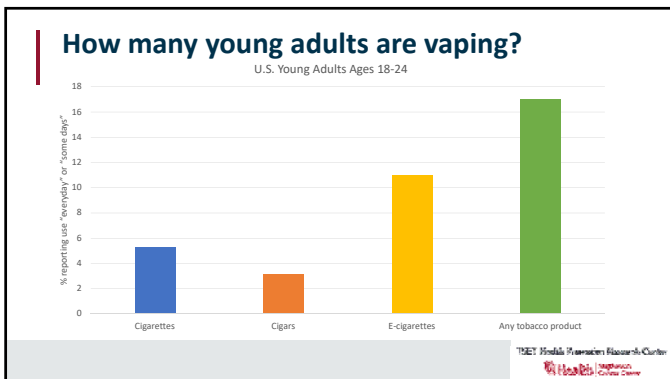
Many e-liquids contain nicotine. Some contain cannabis oil.



TSET Health Promotion Research Center







Identify risk factors contributing to vaping among youth and young adults

What are the risk factors for vaping?

Sociodemographic factors

Older teens

Males

LGBTQ+ teens

Findings have been inconsistent regarding race, ethnicity, and SES



TREY Health Promotion Research Center
The University of Mississippi
The Center for Tobacco Use and Prevention

What are the risk factors for vaping?

Psychosocial factors

Youth with greater mental health concerns (e.g., depression, anxiety, adverse childhood experiences)

Youth with parents and/or peers who use tobacco

Greater perceived social norms surrounding e-cigarette use

Lower perceived harm/addictiveness of e-cigarette use

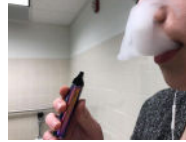
Other tobacco product use or substance use

TREY Health Promotion Research Center
The University of Mississippi
The Center for Tobacco Use and Prevention

What are the risk factors for vaping?

Contextual factors

- Greater advertising/marketing exposure
- School-based policies
- Proximity to tobacco retailers/vape shops



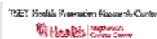
Recognize the signs and risks of youth and young adult vaping

What are the signs of youth nicotine vaping?

Dependence

- Needing to vape more to get the same effects
- Vaping more than intended
- Feeling unable to cut down or quit vaping

E-cigarette addiction severity index: "On a scale of 0–100% (not addicted to extremely addicted), how addicted to e-cigarettes do you think you are?"



What are the signs of youth nicotine vaping?

Withdrawal

- Strong cravings to vape
- Difficulty concentrating
- Irritability, sadness and anxiety



TRBET Health Practitioner Research Center
 The Heart of the Community

What are the risks of vaping for teens?

- Higher risk of smoking
- Toxicant exposure
 - Flavorings approved as safe to eat may not be safe to inhale
 - Harmful substances include formaldehyde, acetaldehyde
 - Fine particles get into the lungs
- Short-term cardiovascular effects



TRBET Health Practitioner Research Center
 The Heart of the Community

What are the risks of vaping for teens?

- Nicotine addiction
- Escalation from light to regular use
- Injury from exploding devices (rare, but possible)
- Risk of serious lung injury



TRBET Health Practitioner Research Center
 The Heart of the Community

What are the risks of vaping for teens?

Transitions from e-cigarette to other tobacco product use

Among e-cigarette only users:

- 15.2% transitioned to cigarette only use
- 16.4% remained e-cigarette only users
- 60.2% transitioned to no tobacco use
- 8.2% transitioned to dual or polyuse



TRBET Health Transition Research Center
HARVARD UNIVERSITY
Cancer Center

What are the risks of vaping for teens?

Transitions from e-cigarette to other tobacco product use

Among cigarette/e-cigarette dual users:

- 60.1% transitioned to cigarette only use
- 5.9% transitioned to e-cigarette use
- 22.6% transitioned to no tobacco use
- 11.4% remained cigarette/e-cigarette dual users



TRBET Health Transition Research Center
HARVARD UNIVERSITY
Cancer Center

Vaping-Induced Lung Injury

2,807 people hospitalized (68 deaths) with lung injury related to vaping between March 2019 and February 2020

Symptoms include shortness of breath, cough, fever, tachycardia

Most cases linked vitamin E acetate, an additive

Most cases linked to cannabis vaping



TRBET Health Transition Research Center
HARVARD UNIVERSITY
Cancer Center

What are the relative risks and benefits of vaping for adults who smoke?

Is vaping better than smoking?

- **Short answer:** For adults who smoke, almost certainly!
- Widely described as "95% safer" than cigarettes– but this estimate was based on earlier generations of e-cigarettes, and is debated
- National Academies report concluded that e-cigarettes are likely to be far less harmful than cigarettes, but long-term health effects are unknown.
- Switching from smoking to vaping may improve respiratory function and cardiovascular markers

TSET Health Promotion Research Center


Is vaping better than smoking?

- A better question: Is vaping **safe**?
 - "Safer than smoking" is a low bar
- Potential harmful effects of vaping
 - Acute cardiovascular effects
 - Impaired wound healing
 - Pulmonary effects of heavy metals
 - Inflammation and oxidative stress



TSET Health Promotion Research Center


Is vaping better than smoking?

- What is the public health impact of vaping?
 - Need to balance potential benefits to people who smoke with potential harms to non-smokers– especially youth



TSET Health Promotion Research Center
Health Promotion Research Center

Can vaping help someone quit smoking?

- Experienced e-cigarette users can reach the same level of nicotine they would get from cigarettes
- Discreetness of vaping may present challenges for quitting
- Many people who vape to quit smoking end up dual-using
- Quitting nicotine entirely is the safest long-term option

TSET Health Promotion Research Center
Health Promotion Research Center

Can vaping help someone quit smoking?

- Evidence for use of e-cigarettes in smoking cessation efforts is mounting
 - Should contain nicotine, similar to nicotine replacement therapy (NRT) and/or medication (e.g., varenicline) *may* increase smoking cessation rates
 - Should be an adjunct to counseling and behavioral support
- Need more evidence on newer-generation cigarettes
- Regulatory context and culture around e-cigarettes might influence outcomes

TSET Health Promotion Research Center
Health Promotion Research Center

Is nicotine vaping harmful or harm-reducing?

- Always **harmful** to youth
- Potentially **harmful** to adults who are not already smoking
- Should be **harm-reducing** for adults who switch completely from smoking to vaping
- Potentially **harm-reducing** for adults who reduce smoking

TSET Health Promotion Research Center
Health Promotion Research Center

Talking to patients & parents about vaping

“The 5 As”

- **Ask** (about current use), **advise** (about the dangers), **assess** (willingness to change), **assist** (with cessation efforts), and **arrange** (for follow-up to check on progress)
- Simple steps to helping youth or adults quit smoking that should take no more than 3-5 minutes
- For younger patients, **anticipate** the conversation and prepare to have it in an appropriate setting (e.g., without parents present)

TSET Health Promotion Research Center
Health Promotion Research Center

ASK

- Vaping is more difficult to notice than cigarette smoking
- Ask at every visit, using terminology familiar to youth
 - “Do you use any vaping products, like vapes, Puff Bars, or JUUL?”
 - “Vaping” can refer to cannabis/marijuana vaping too
 - Ask about other tobacco products, such as cigarettes and little cigars



TSET Health Promotion Research Center
 TCU Health Sciences Center

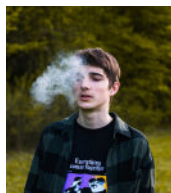
ASK

- Assess vaping frequency and symptoms of dependence
- Ask parents about tobacco exposure in the home, including to vaping products

TSET Health Promotion Research Center
 TCU Health Sciences Center

ADVISE

- Inform patients that quitting is one of the most important things they can do to protect their health
- Other talking points
 - It becomes harder to quit as you get older
 - Vaping can hurt your performance in school and/or sports
 - You can set a good example for your peers by quitting



TSET Health Promotion Research Center
 TCU Health Sciences Center

ASSESS

- “On a scale of 1-10, how ready are you to quit?”
 - If unready, prompt them to give reasons why they *do* want to quit.
 - “You said your readiness is at a 3. Why not a 1 or a 2?”
- “When would you be ready to quit?”
- “Have you tried to quit before? What do you think made you start vaping again?”



TSET Health Promotion Research Center
 Health Promotion Research Center

ASSIST

- Encourage the patient to set a quit date
- Provide resources
 - “This is Quitting” text message program for youth and young adults: text DITCHVAPE to 88709
 - “My Life, My Quit” for ages 13-17 provides text, phone, and online support: MyLifeMyQuit.com
 - Quit the Hit, a free program delivered through Instagram: QuitTheHitNow.com
 - Can prescribe nicotine replacement therapy if indicated
- Identify family members or friends who can be supportive

TSET Health Promotion Research Center
 Health Promotion Research Center

ARRANGE

- Arrange follow-up appointment to review progress and re-evaluate NRT use (if prescribed or recommended)
- Arrange referrals to other providers (e.g., therapist) as needed



TSET Health Promotion Research Center
 Health Promotion Research Center

Advocacy Opportunities

- Campaign for Tobacco-Free Kids provides action alerts and policy updates (TobaccoFreeKids.Org)
- Supporting local tobacco control measures at City Council meetings or by phone
- Help address the drivers of tobacco use (e.g., discrimination, poverty) in your community

TSET Health Promotion Research Center

