Vaping: What to do? What to do?

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Conflict of Interest

The speakers have no conflicts of interest to disclose.
What are the issues with vaping?

There are at least 3 distinct issues with vaping that must be acknowledged

• Nicotine addiction → smoking tobacco
• THC (marijuana) poisoning
• Lung tissue injury and destruction from diluents and unknown chemicals
The Rapid Rise of Vaping
MN Student Vaping

Grade 8: 6% (2016) to 11% (2019)
Grade 9: 9% (2016) to 16% (2019)
Grade 11: 17% (2016) to 26% (2019)
E-cigarette Use by Age

- Adults: 6%
- Young Adults (18-24): 22%
- 11th Graders: 26%

Minnesota Department of Health
Dual Use: Marijuana

35% of high school vapers also vaporize cannabis

E-cigarettes

Marijuana

Minnesota Youth Tobacco Survey, 2017
# Prevalence of Reported Marijuana Vaping in past 30 days

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
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<tbody>
<tr>
<td><strong>Past 30 d</strong></td>
<td></td>
<td></td>
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<tr>
<td>No. of 8th graders</td>
<td>4869</td>
<td>4465</td>
<td>8701</td>
</tr>
<tr>
<td>Prevalence, % (95% CI)</td>
<td>1.6 (1.3-2.1)</td>
<td>2.6 (2.0-3.4)</td>
<td>3.9 (3.3-4.7)</td>
</tr>
<tr>
<td>No. of 10th graders</td>
<td>4412</td>
<td>4666</td>
<td>9026</td>
</tr>
<tr>
<td>Prevalence, % (95% CI)</td>
<td>4.3 (3.5-5.3)</td>
<td>7.0 (5.9-8.3)</td>
<td>12.6 (11.1-14.3)</td>
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<tr>
<td>No. of 12th graders</td>
<td>4073</td>
<td>4247</td>
<td>8314</td>
</tr>
<tr>
<td>Prevalence, % (95% CI)</td>
<td>5.0 (4.1-6.0)</td>
<td>7.5 (6.2-8.9)</td>
<td>14.0 (12.6-15.5)</td>
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Increased Risk of Smoking

4 times

Teens who vape have 4x greater odds of smoking

Watkins et al., 2018, JAMA
E-cigarettes
How E-cigarettes Work

- Heating element (atomizer)
- Optional Button
- Battery (rechargeable or disposable)
- Chamber for liquid nicotine (tank)
- Mouthpiece
E-liquids & Flavors

- Propylene glycol
- Vegetable glycerin
- Flavoring chemicals
- Nicotine (extracted from tobacco)
Then and Now
Health Risks of Vaping: What We Know
Minnesota 11th graders don’t perceive e-cigarettes as dangerous.
Nicotine Poisoning / Sickness

In large amounts, nicotine is a poison that can cause vomiting, nausea and rapid breathing.

In 2014 an eighteen month old child died after accidentally drinking e-liquid.

Minnesota Department of Health, 2015.
To be absolutely clear, we DO NOT recommend you make liquid THC in your home, unless you are a trained professional within a properly equipped environment, and we are not responsible for any damages or injuries caused. All activities are at your own risk.
What Does Liquid THC Look Like?

Liquid THC can come in many different viscosities and physical appearances depending on the strain that was used, the type of alcohol that was used, the temperature during extraction, etc. Realistically, there are dozens of different factors that can contribute to the appearance of a quality liquid THC tincture.

Generally speaking, though, a good liquid THC will be pretty opaque or cloudy. This means light will not be able to pass through it. Next, it will range in color from a light, limey greenish to an ultra-dark, tarry, almost black goa. The best THC oil is typically a beautiful shade of amber or gold.

Whatever the case is, your liquid THC should not be clear. Additionally, there shouldn’t be any visible flakes, plant matter, etc. floating around in it.

How Do You Use Liquid THC?
Marijuana Poisoning / Sickness

Number of emergency department/urgent care visits with cannabis-associated diagnostic codes or positive urine drug screens by adolescents aged 13 to < 21 to a tertiary-care children’s hospital system in Colorado by year

In the News: Vaping Related Lung Illness

Henry Ford Health System Performs First Double Lung Transplant for Patient Injured by Vaping

November 12, 2019

Family Hopes Sharing Information Saves Others from Tragedy
Vaping & Respiratory Health

Increased chronic respiratory issues, asthma exacerbations, aldehydes, and immune impairments

Vaping & Cardiovascular Health

Early signs of cardiovascular damage like blood vessel damage, reduced blood flow, and decreased nitric oxide production

American Heart Association, 2018, Lee et al., 2019, Caporale et al., 2019
Vaping, Carcinogens & Harmful Chemicals

Vapes contain chemicals like formaldehyde, volatile organic compounds, heavy metals (lead, chromium, nickel), and N-nitrosonornicotine (NNN).
Tools to Address Vaping in the School
School Toolkit: Addressing Student Use of E-cigarettes and Vapes

School E-cigarette Toolkit

ADRESSING STUDENT USE OF E-CIGARETTES AND OTHER VAPING PRODUCTS

For the first time since 2000, overall youth tobacco use has increased in Minnesota. The rapid uptake of e-cigarettes and other vaping devices has suddenly reversed a trend of declining teen tobacco use in Minnesota, and recent data show one in five high school students use a cigarette, a nearly 50 percent increase since 2014.

This toolkit provides tools and resources for all Minnesota school staff, including administrators, teachers, and health services staff, who are working to address the use of e-cigarettes and other vaping products in schools. This toolkit also provides opportunities for action that can be taken by various school staff, along with resources and tools to help.

E-cigarettes and other Vaping Products

E-cigarettes are battery-powered devices that allow users to inhale or vape, aerosolized liquid (inhalation). E-cigarettes, "vapes," vapor or e-liquid pens, e-cigarettes, and other vaping products recently surpassed conventional cigarettes as the most commonly used tobacco product among youth. It is critical that public health officials and the general public understand the potential risks of using them.

Nearly all e-cigarettes contain nicotine. Nicotine is highly addictive and can harm the developing adolescent brain. Because the brain is still developing until about age 25, youth and young adults exposure to nicotine can lead to addiction and long-term negative health effects.

Learn more about e-cigarettes and nicotine

- Health Advisory: Nicotine and the Developing Brain (PDF)
- Health Risks of Nicotine for Youth (PDF)
- E-cigarettes and other vaping products (PDF)
- Addictive - Youth Awareness Initiative (PDF)
- E-Cigs 2.0: The Three Generation Initiative (PDF)
- The Impact of E-Cigarettes on the Lung (PDF)
- The Advantages of e-Cigarettes" (PDF)
- Minnesota Lung Association (PDF)

health.mn.gov/ecigarettes
Educating Students: Not Just for Health Class

TCMS Lesson Plan  
(1 session)

The Real Cost of Vaping  
(1 session)

Catch My Breath  
(multi-session)

Stanford Tobacco Prevention Toolkit  
(multi-session)
Nicotine Addiction

Many teens who vape may already be addicted to nicotine or have no desire to stop, so simply telling them to stop probably won’t work.
STUDENT COMMERCIAL TOBACCO USE IN SCHOOLS

Alternative Measures

School policies regulating the use and possession of commercial tobacco products, including electronic delivery devices (e.g., e-cigarettes, vaping devices, JUUL, Suorin), often contain punitive measures for student violations.

This publication provides sample language and ideas for evidence-based solutions and information as to why these alternative measures may be more effective than suspension and expulsion at addressing student tobacco use and nicotine addiction as part of a school’s Commercial Tobacco-Free Policy.

1. The tobacco industry has historically and continues to target youth to maintain profits, especially in and around schools. Schools should consider these predatory tactics when creating or modifying a policy to address youth possession and use of commercial tobacco in schools.

When considering how to effectively address youth use and possession of commercial tobacco products in schools, it is important to understand how pervasive the industry’s targeting of youth and young adults with these highly addictive products has been for several decades. Overwhelming evidence, including the

www.publichealthlawcenter.org
Helping Teens Quit

INDEPTH: An Alternative to Teen Nicotine Suspension or Citation
But we also need to ask...

...why are students vaping?

• Oppositional behavior
• Search for alternative states of consciousness
• Escape
• Self-medication

Human beings seem to have a universal drive to achieve alternative states of consciousness. We will be helping students if we teach them how to do this without drugs.
Public Policy Solutions
New Federal Regulations

US raises legal age to buy cigarettes, vapes to 21

By Jacqueline Howard, CNN

Updated 11:20 PM ET, Fri December 20, 2019

Trump administration imposes ban on some, but not all, vaping flavors in retreat on earlier plan

Los Angeles Times
The President’s approach won’t be enough

With Partial Flavor Ban, Trump Splits the Difference on Vaping

An initiative to reduce the use of e-cigarettes by teenagers led to compromise. Sales of most flavored pods popular with youth will be forbidden, but flavored liquid nicotine for open tank devices will be exempt.
JUUL has teamed up with Big Tobacco

So don’t expect the solution to come out of Washington
Minnesota Public Policy Options

- Restrict flavored tobacco and/or e-cigarettes to adult-only tobacco shops
- Ban the sale of flavored tobacco products
- Ban the sale of all vaping devices
- Fund statewide tobacco prevention and treatment programs
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Steps to Vaping Control

• AMSD BOD endorses vape sale ban and asks school districts to endorse ban

• School districts endorse ban and ask municipalities to ban sale of vape products

• Municipalities ban sale of vape products and ask their state representatives and senators to ban sales statewide

• Municipalities ask Minnesota League of Cities (MLC) to endorse statewide ban

• MLC, and everyone else, asks legislature to ban sale of vape products.
Questions?