The Truth About Electronic Cigarettes (a.k.a. Vape Products)

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WHAT IS AN E-CIG?
Is Juul getting a new generation addicted to Nicotine?

https://www.youtube.com/watch?v=WzGX13YI6P8

Ted Talks

Highlights of today’s presentation

- Describe how electronic cigarettes operate and be able to visually identify them
- List 3-4 public health consequences, safety and health concerns of e-cigarettes
- Explain why youth are using these products
- Describe the “E-cigarette climate” in Michigan
- List 2-3 e-cigarette related resources
BRIEF HISTORY OF ELECTRONIC CIGARETTES

➢ 1930: Patent granted to Joseph Robinson. It was never commercialized, and it is not entirely clear that even a prototype of this primitive device was made.


➢ 1986: The Favor cigarette- noncombustible

➢ 2003: Modern day e-cigarette- Chinese pharmacist Hon Lik develops the Ruyan

➢ 2007: E-cigarette enters the U.S. market, including the Ruyan

➢ 2013: Imperial Tobacco Group purchases intellectual property behind the Ruyan for $75 million

➢ 2014: estimated 90% of the World’s production of e-cig technology and products comes from China

➢ Big Tobacco nor owns several e-cigs companies: JUUL (Altria owns 35%), Vuse (British American Tobacco), IQOS (Philip Morris)
Electronic Cigarettes (vape products)
Electronic Cigarettes

- Allows user to inhale aerosol containing nicotine and/or other substances.
- Disposable or rechargeable and/or refillable.
- Contain a cartridge filled with liquid nicotine, flavorings and glycerin or propylene glycol.
- When coil heats, it converts the contents of the cartridge into aerosol.
Electronic cigarettes can be used for more than e-juice...

➢ One-third of US middle and high school students reported using e-cigarettes with non-nicotine substances.

➢ 1 in 3 youth have used marijuana with the JUUL device.

➢ Hash oils can reach 95% pure THC, the psychoactive component in marijuana. High concentrations could cause side effects like temporary psychosis.
It’s an Aerosol, Not a Vapor

Image Credit: via themounproject.com
WHAT IS IN E-CIGARETTE AEROSOL?

The e-cigarette aerosol that users breathe from the device and exhale can contain harmful and potentially harmful substances:

- Volatile organic compounds
- Cancer-causing chemicals
- Ultrafine particles
- Heavy metals such as nickel, tin, and lead
- Flavoring such as diacetyl, a chemical linked to a serious lung disease

It is difficult for consumers to know what e-cigarette products contain. For example, some e-cigarettes marketed as containing zero percent nicotine have been found to contain nicotine.
What are E-cigarettes NOT?

• E-cigarettes are **NOT** an approved U.S. Food and Drug Administration (FDA) quit tobacco device and should **NOT** be marketed as such.
**JUUL flavor pods**
The juice-flavored pods contain 50 milligrams of nicotine, roughly equivalent to a pack of cigarettes.

**Design**
The design of the e-cigarette is about the same size as a cigarette and weighs a couple of grams.

**USB charging dock**
The battery is charged by dropping the body on a magnetic USB adapter. It takes an hour to fully charge and will last up to 200 puffs, a full day of regular use.

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**JUUL**

JUUL Labs represented 72.2 percent of dollar market share in the four-week period ended Aug. 11, 2018, according to Nielsen data.

**Juul dominates the U.S. e-cigarette market**

Now 76%!!
“Recognition, use and perceptions of JUUL among youth and young adults”

- Nearly 1-in-5 youth have seen JUUL used at their school.

- Youth reported relative ease obtaining JUUL devices.

- Most were **not aware** that JUUL pods **always** contain nicotine.

- Nearly half of those who are aware of JUUL believe it is “a lot” or “a little” LESS harmful than cigarettes.
TEACHERS AND PARENTS:
That USB Stick Might Be an E-cigarette

E-cigarettes are the most commonly used tobacco product among U.S. middle and high school students.

Some e-cigarettes don’t look like tobacco products, so some kids use.

An increasingly popular e-cigarette, called JUUL, is shaped like a USB flash drive.

JUUL delivers a high dose of nicotine. Nicotine is highly addictive and can harm adolescent brain development.

TOBACCO PRODUCT USE IN ANY FORM, INCLUDING E-CIGARETTES, IS UNSAFE FOR YOUTH.
October 17, 2019

Juul Labs is no longer selling certain flavors of its e-cigarettes pods, including mango, creme, fruit and cucumber online.

BUT

Juul will continue to sell tobacco, mint and menthol flavors online, insisting those products may be able to help adult smokers move away from cigarettes.

BUT

However, many youth addiction experts say it's the minty flavors in particular that are attractive to young people.

AND

stop advertising in the U.S.
New: 35 mL per bottle and more attractive flavors and packaging
500 BRANDS
7,000 FLAVORS

- Starburst
- Gummy Bear
- Sugar Cookie
One anonymous 15-year-old describes it like this:

The first time was in the lunchroom. Everyone else was hitting it and I was like “Alright, I want to try that.” I guess I knew there was nicotine in it, but I had no idea that it had so much. When I hit it for the first time it was, like, really crazy. I felt a really big buzz off of barely anything.

I don’t even feel a buzz anymore.
Tank:

This product was very popular when e-cigarettes first hit the market.

E-juice required

Very heavy compared to the new generation products

One version $37.99
The “counterfeit” pods which fit in both the JUUL and the Suorin iShare

There is 1 additional pod and pack of 5 costs less than the JUUL pods

Price: $14
Suorin Drop
$21.99

Suorin Air
$14.99

Khree UFO
$19.99

SMOK Rolo Badge
$16.95
MICO kit

• Can fit in the palm of your hand
• Sleek design, multicolored fluid lines look like an abstract oil painting
• Comes with a lanyard for “both decorative and portability purposes”

Price: $24.95
Uwell Amulet Pod System

- Looks similar to Apple Watch
- Gives the time and date
- Face of watch pops out and becomes vaping device
- $34.99
Dripping
IQOS - I Quit Ordinary Smoking
HEAT-NOT-BURN CIGARETTES
# 2017 E-cigarette Data - Adults

<table>
<thead>
<tr>
<th>Status</th>
<th>USA</th>
<th>MICHIGAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current e-cigarette user</td>
<td>4.6%</td>
<td>4.9%</td>
</tr>
<tr>
<td>Former e-cigarette user</td>
<td>16.3%</td>
<td>17.4%</td>
</tr>
<tr>
<td>Never e-cigarette user</td>
<td>79.3%</td>
<td>77.7%</td>
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## Michigan Profile for Healthy Youth Survey Results - Monroe County Schools

<table>
<thead>
<tr>
<th>Year</th>
<th>7th Grade</th>
<th>9th Grade</th>
<th>11th Grade</th>
<th>9th &amp; 11th Grade</th>
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<tbody>
<tr>
<td>2015/16</td>
<td>5.60%</td>
<td>11.50%</td>
<td>18.10%</td>
<td>14.70%</td>
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<tr>
<td>2017/18</td>
<td>7.10%</td>
<td>21.40%</td>
<td>31.40%</td>
<td>26.50%</td>
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</tbody>
</table>

- % of students who used an electronic vapor product during the past 30 days
2018 NATIONAL YOUTH TOBACCO SURVEY FINDS CAUSE FOR CONCERN

Current e-cigarette use among middle and high school students increased alarmingly between 2017 and 2018.

Here is a breakdown of the recent findings:

SURGE IN YOUTH CURRENT E-CIGARETTE USE — 1.5 Million More Students Used E-Cigarettes in 2018 vs 2017

- **78% Increase** Among High School Students
  - 2017: 11.7%
  - 2018: 20.8%

- **48% Increase** Among Middle School Students
  - 2017: 3.3%
  - 2018: 4.9%
YOUTH E-CIGARETTE USE IS RISING

E-CIGARETTES TYPICALLY DELIVER NICOTINE

YOUTH NICOTINE EXPOSURE CAN:

- CAUSE ADDICTION
- HARM THE DEVELOPING BRAIN

E-CIGARETTE USE SURGED DURING 2017-2018

IN 2018:

1 IN 5 HIGH SCHOOL KIDS
1 IN 20 MIDDLE SCHOOL KIDS CURRENTLY USE E-CIGARETTES

HELP PREVENT YOUTH E-CIGARETTE USE

- KNOW THE RISKS OF E-CIGARETTES
- TALK TO YOUTH ABOUT THESE DANGERS
- BE TOBACCO FREE

National Youth Tobacco Survey as reported in Cullen et al., MMWR 2018

WWW.CDC.GOV
The Adolescent Brain

- Human brain matures at about age 25
- Nicotine addiction more likely the earlier one initiates
- Mood disorders, lower impulse control, attention and learning problems
Most e-cigarettes contain **NICOTINE**, which causes **ADDICTION**, may harm brain development, and could lead to continued tobacco product use among youth.
Common myths believed about vaping, along with the facts.

“It’s just flavoring.” Vapes get their flavors from chemicals. While these flavorings are safe to eat in food, they’re not safe to inhale. Inhaling flavor chemicals can harm your lungs.11

Want an example?
Some buttery-flavored vapes like caramel contain diacetyl and acetal. Inhaling diacetyl has been linked to popcorn lung, a lung disease that doesn’t have a cure.12

Some vapes that claim they are nicotine-free are not.8,17-22

“My vape says it’s nicotine-free. There’s no way I’ll become addicted.”

Vaping delivers nicotine to the brain in as little as 10 seconds.14,15

A teen’s brain is still developing, making it more vulnerable to nicotine addiction.16

Nicotine exposure during the teen years can disrupt normal brain development. It can have long-lasting effects, like increased impulsivity and mood disorders.23-25

“Just because I vape doesn’t mean I’m going to smoke cigarettes.”

Research shows teens who vape are more likely to try smoking cigarettes.24

“It’s just water vapor.” Vaping can expose the user’s lungs to harmful chemicals like formaldehyde, diacetyl and acrolein, as well as toxic metal particles like nickel, tin and lead.4,8-10,11-13

“I don’t have an addictive personality—I won’t get hooked on vapes.”
Why the Rise in E-cigarette Use?

- Targeted tobacco industry marketing
- Flavors
- Lack of regulation
FDA proposes a step to curb youth use of flavored electronic cigarettes, but it’s not enough...

- November 15, 2018: the FDA proposes to restrict the sale of some flavored electronic cigarettes in stores - EXCEPT MINT AND MENTHOL (and tobacco) flavors - and with heightened age verification for online sales

- New data shows that 51% of high school e-cigarette users use mint or menthol products

- An effective strategy would be to ban ALL FLAVORED PRODUCTS
“Trendy” Products
Social Media Marketing
Targeted Marketing
High school bathrooms

Kids who actually have to use the bathrooms

Juulers

Instagram

12,066 likes

doit4juul Which one are you 😂 #DI4J

View all 353 comments

2 days ago

Can't stand it when people pee in the juul room

Snapchat
LACK OF REGULATION

- TV, radio, billboard
- Point of Sale
Senate Bill 155

Approved on June 4, 2019 and took effect on September 2, 2019

“Vapor products or alternative nicotine products at retail shall not display for sale unless the vapor product is for sale behind a counter in area accessible only to employees or within a locked a case so that a customer wanting access to the vapor product must ask an employee for assistance.”

Violation could lead to a $500.00 fine
Health Concerns

- Dual Use
- Flavorings
- Primary, Secondhand, Thirdhand Aerosol Exposure
Health Concerns: Reported Impacts to FDA

- Pneumonia
- Asthma
- Cardiovascular Disease
- Skin Disorders (contact dermatitis)
- Oral Health (mucosal lesions)
- Disorientation
- Seizure
- Hypotension, and others
Lung injury associated with use of e-cigarette, or vaping, products

- As of October 15, 2019, **1,479 lung injury cases** associated with the use of e-cigarette, or vaping, products have been reported to CDC from 49 states (all except Alaska), the District of Columbia, and 1 U.S. territory.
- **Thirty-three deaths** have been confirmed in 24 states.
- All patients have reported a history of using e-cigarette, or vaping, products.

- Among 1,358 patients with data on age and sex:
  - 70% of patients are male.
  - The median age of patients is 23 years and ages range from 13 to 75 years.
  - 79% of patients are under 35 years old.
- By age group category:
  - **15% of patients are under 18 years old;**
  - 21% of patients are 18 to 20 years old;
  - 18% of patients are 21 to 24 years old;
  - 25% of patients are 25 to 34 years old; and
  - 21% of patients are 35 years or older.
Safety Concerns

- Explosions
- Charger danger
- Fires
- Poisoning
- Hazardous Waste & Litter

Just a few drops of liquid nicotine could result in a trip to the ER.

Lethality depends on the weight of the child and the concentration of the liquid nicotine.

Ingesting less than 1/4 of a teaspoon of 1.8% concentrated liquid nicotine can be fatal to a 50 pound child.

Nicotine is an acute toxin. Liquid nicotine can be harmful if swallowed or absorbed through the skin.

Symptoms include:
- Nausea
- Vomiting
- Increased heart rate
- Increased blood pressure
- Seizures
- Death

POISON Help
1-800-222-1222
Electronic Cigarette and Liquid Nicotine Cases
All Ages

Cases: 1540 4011 3733 2899 2470 3137 635

American Association of Poison Control
What’s the bottom line?

- E-cigarettes are not safe for youth, young adults, pregnant women or adults who do not currently use tobacco products.

- If you’ve never smoked or used other tobacco products or e-cigarettes, don’t start.

- Scientists still have a lot to learn about whether e-cigarettes are effective for quitting smoking.
FDA had not been regulating the manufacture of e-cigarette components and parts, until the Deeming Rule - August 8, 2016.

With deeming, FDA regulates ALL tobacco products. This includes e-cigarettes, hookah, cigars, pipe tobacco (and pipes), dissolvable, nicotine gels, e-liquid which ARE DEFINED AS TOBACCO PRODUCTS.

Gives the FDA authority to regulate the manufacture, distribution and marketing of ALL products that are defined as tobacco products.
Food & Drug Administration Deeming Rule

Restricts youth access to tobacco products:

- No sale to persons under the age of 18 years (both in-person and online)
- Requires age verification by photo ID
- No sale of tobacco products in vending machines (unless in an adult-only facility)
- No distribution of free samples
Electronic Cigarettes in Michigan

*Senate Bill 106 and Senate Bill 155, signed into law on 6/4/19:*

- Both bills amend the Youth Tobacco Act

- SB 106 defines e-cigarettes, alternative nicotine products, vapor products and other emerging tobacco products *SEPARATELY FROM TOBACCO PRODUCTS*

- SB 155 defines ‘liquid nicotine’ and ‘liquid nicotine container’ and requires containers to meet a minimum safety standard and storage of vapor products in a locked case or behind the counter
Problems Caused by Defining E-cigarettes Separately from Tobacco Products

- Appeal to youth
- Not subject to the same evidence-based measures that govern tobacco products:
  - Not taxed
  - Not covered by the state’s Smokefree Air Law
  - Lack of advertising restrictions - still marketed on TV, radio, social media, etc.
To report a violation: Call 1-877-CTP-1373

FDA RULES FOR ELECTRONIC NICOTINE DELIVERY SYSTEM (ENDS) SALES
(Including e-cigarettes, vape pens, e-hookahs, e-cigars, personal vaporizers, and electronic pipes.)

Are you taking the necessary steps to prevent underage tobacco use?

- Check photo ID of everyone under age 27 who attempts to purchase ENDS.
- Only sell ENDS to customers age 18 and older.*
- Do NOT give away free samples of ENDS, including their components and parts.
- Do NOT sell e-cigarettes in a vending machine unless in an adult-only facility.**
Electronic Cigarettes in Michigan

- Local Action! E-Cig bans do exist in many places...
  - Parks, beaches, other outdoor locations
  - Indoors - bars, restaurants, government owned and operated buildings, housing
  - Tobacco free school policies
What else can be done?

- Tell the FDA about faulty tobacco products! www.safetyreporting.hhs.gov

- Ensure that ALL schools have comprehensive tobacco free policies including electronic cigarettes

- Include electronic cigarette products in indoor smokefree air laws and outdoor clean air policies

- Support increasing tobacco taxes and using $ to assist with tobacco prevention and quit programs

- Support Tobacco 21 as a state law (increasing the age of sale of tobacco products to 21 years). Ask your organization to sign the Resolution of Support offered by Tobacco Free Michigan tfm@tobaccofreemichigan.org
What else can be done?

- Educate your communities and circles of influence about e-cigarette products
- Use Youth to spread the message
- Talk to retailers in your community about placing all e-cigarette products behind the counter to restrict youth access
- If you’re a health professional, make sure to ask all your patients, at every visit, about their tobacco use including electronic products. Document this.
- Keep the Michigan Tobacco Section informed of local and county wide e-cigarette policy and interest.
My Life, My Quit - A Quit Tobacco and Vaping Program for Teens

- First comprehensive program designed just for teens
- Teen focused messages
- Five real time coaching sessions via live text messaging, online chat or phone
- Specially trained coaches
- Certificate of completion

TOLL FREE: 1-855-891-9989

mylifemyquit.com
Michigan Department of Health and Human Services new e-cigarette webpage

www.Michigan.gov/e-cigarettes

- Many resources available for download including
  - fact sheets,
  - infographics,
  - an e-cigarette webinar and more!
Youth Quit Tobacco Resources

Tobacco Free Kids
Contains fact sheets and advocacy information. Site for information for Kick Butts Day held annually in March. “Taking Down Tobacco” program. 
http://www.tobaccofreekids.org

Smoking Stinks
A youth quit smoking website containing free downloads, quizzes, quit tips and more  http://smokingstinks.org/

Smokefree Teen
Free text message quit tobacco service. 24/7 encouragement, advice and tips. Teens can sign up at www.teen.smokefree.gov or text QUIT to iQuit(47848)

The Truth and Finish It
Educates youth about the dangers of tobacco, media and tobacco industry awareness and quitting smoking  http://www.thetruth.com
This is Quitting:

You can access the program by:
- texting “QUIT” to (202) 804-9884
- or
- Enrolling in the free digital quit programs: This is Quitting or BecomeAnEX, which integrate the text program.

http://www.thisisquitting.com/
Youth Quit Tobacco Resources

- The Real Cost

https://therealcost.betobaccofree.hhs.gov/?g=t

FDA prevention campaign geared towards 12-17 years old
“The Real Cost” Youth E-Cigarette Prevention Campaign

https://www.youtube.com/user/KnowTheRealCost

http://www.scholastic.com/youthvapingrisks/
FDA and Scholastic have joined efforts on ENDS prevention curriculum “The Real Cost of Vaping” for grades 9-12
Tobacco Prevention Toolkit for educators, administrators, parents/guardians and anyone who works with youth

http://tobaccopreventiontoolkit.stanford.edu
https://med.stanford.edu/tobaccopreventiontoolkit/E-Cigs.html
Electronic Cigarette Resources

Know the Risks: Surgeon General Advisory: [https://e-cigarettes.surgeongeneral.gov](https://e-cigarettes.surgeongeneral.gov)

JUUL and the Guinea Pig Generation factsheet

Healthy Children.org: Health Issues - Tobacco:
[https://www.healthychildren.org/English/health-issues/conditions/tobacco/Pages/default.aspx](https://www.healthychildren.org/English/health-issues/conditions/tobacco/Pages/default.aspx)

Know the Risks: Talk with your Teen about e-cigarettes- A tip sheet for Parents

Tobacco Free Kids JUUL and Youth: Rising E-cigarette Popularity:
[https://www.tobaccofreekids.org/assets/factsheets/0394.pdf](https://www.tobaccofreekids.org/assets/factsheets/0394.pdf)
Quit Tobacco Resources

- **www.Michigan.gov/tobacco**

MI Department of Health and Human Services Tobacco Section website offers resources, fact sheets and information on quitting.

- **https://Michigan.quitlogix.org**

The Michigan Tobacco Quitline site offers information on how to quit, a smoking calculator and more. Works with people of all ages, including youth. 1-800-QUIT-NOW
Questions?

Contact:
Vicky Loveland @ 734-242-1331 or vicky.Loveland@ gmail.com