



E-Cigarette use among Lodi High School Students

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What are the Products?



The Concerns



What You Can Do



Questions/Discussion

It doesn't matter what you call them,
they are all e-cigarettes



E-Cigars | Mods | Vape Pens | E-Hookahs | Cigalikes | JUULs

Left to Right:

JUUL = Most popular e-cigarette product among youth and young people

Disposable E-Cigarette products (the next 4 products) = these products allow for about 200 puffs, once it's emptied, you throw the product away

Refillable, rechargeable mods/e-cigarette products (final 5) = you refill these products with e-juice (liquid nicotine), and can recharge the battery via USB

E-Juice



- E-juice is the liquid that is put inside of an e-cigarette to be inhaled.
- Currently, there are over 7,700 flavors of e-cigarettes and e-juice. E-juice comes in many sweet flavors that are attractive to users, such as strawberry, watermelon, and sour gummy worms. 1 out of 3 youth tried e-cigarettes because they tasted good.* Almost 88% of youth think they would not try an e-cigarette if it did not have any flavor such as mint, candy, fruit, or chocolate. **
- A 2014 study found that out of 159 e-juice samples, 75% contained diacetyl.*** Diacetyl has even been found in e-juice labeled as “diacetyl-free”. Diacetyl is added to e-juice because it gives products a creamy, smooth taste and finish. And a new study published just this month by Harvard, found that the chemical is common even in less-obvious flavors such as watermelon. Diacetyl is a chemical that has been approved for use in food by the Food and Drug Administration, or the FDA, but when inhaled it is associated with lung disease.****
- Nicotine has also been found in some e-juices.*** Nicotine is highly addictive, and it can have lasting effects on adolescent brain development, including permanently lowering impulse control and damaging parts of the brain that control attention and learning.*****

Photo source: <https://vapingcheap.com/wp-content/uploads/2017/02/Candy-King-E-Liquid-Review-1300x650.jpg>

**http://www.monitoringthefuture.org/pressreleases/15ecigpr_complete.pdf*

***<https://www.dhs.wisconsin.gov/publications/p01624.pdf>*

****<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4892705/>*

*****<http://ehp.niehs.nih.gov/15-10185/>*

******<https://www.tobaccofreekids.org/assets/factsheets/0394.pdf>*



- E-Cigarettes are devices that allow users to inhale an aerosol containing nicotine and other substances.
- They are battery-operated devices that use a vaporizer to heat a cartridge containing e-juice, that then releases a chemical-filled aerosol.
- E-Cigarettes can be purchased either as disposable devices or reusable devices. The disposable devices already have the e-juice loaded into the cartridge. It is used until the device is empty and then thrown away.
- Reusable devices are the most popular device where the user purchases a desired flavor and nicotine level of e-juice that they put into their reusable e-cigarette.

The pictures here show a:

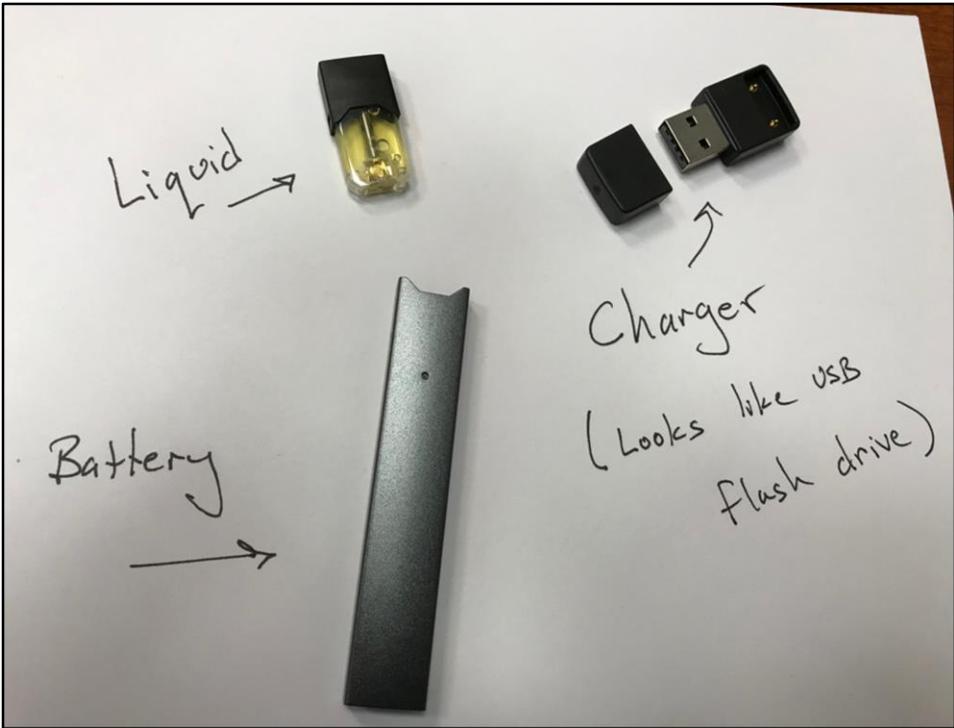
1. 'cig-a-like' – made to look and feel like a conventional cigarette, they are small, light and mimic all the design features of real cigarettes (most are disposable)
 2. 'vape pen' – one of the most common, reusable types, these can be filled with the user's choice of e-liquid
 3. 'mod' – bigger devices, more powerful and customizable (batteries, heating coils), these create larger clouds of vapor and heat hotter than vape pens
- The long-term health consequences of these devices is currently unknown and there is no scientific evidence that establishes the safety of e-cigarettes. E-cigarettes are currently not regulated by the FDA.

Photo sources:

Cigalike: <http://www.truthinitiative.org>

Vape Pen: https://static01.nyt.com/newsgraphics/2014/03/04/ecig-graphic/8513dabb2a05c99414b514b749cc675c67189193/0305-biz-ecig-artboard_2.png

Mod: <http://www.vaporclubs.net/wp-content/uploads/2013/10/Vapor-Club-Innokin-iTaste-MVP-2600maH-e-cig-battery600.jpg>



Liquid →

Battery →

Charger
(Looks like USB
flash drive)



JUUL is brand of vaping device, much like Nike is a brand of shoe.

It comes in a starter pack that includes the device and four JUULpods. \$50

As you can see, it can be charged using a laptop and looks like a USB drive.

Charges in 1 hour

Can fit in the palm of your hand.

Youth do no consider to be the same as e-cigs or any of the descriptors listed in the previous slide. When using, they refer to is 'JUULing'

JUUL Is considered the iPhone of e-cigarettes



The Concerns

It's an Aerosol, Not a Vapor



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- E-cigarettes/vape pens allow the user to make large clouds that many think are just water vapor
- In reality the 'cloud' is a mixture of many different chemicals that were either present in the e-liquid before or produced during the heating process
- Instead of just mixing with the air like a pure gas, aerosols can leave drops behind.

What's in E-Cig Aerosol?

<ul style="list-style-type: none"> • Propylene glycol • Glycerin • Flavorings (many) • Nicotine • NNN • NNK • NAB • NAT • Ethylbenzene • Benzene • Xylene • Toluene • Acetaldehyde • Formaldehyde • Naphthalene • Styrene • Benzo(b)fluoranthene 	<ul style="list-style-type: none"> • Benzo(ghi)perylene • Acetone • Acrolein • Silver • Nickel • Tin • Sodium • Strontium • Barium • Aluminum • Chromium • Boron • Copper • Selenium • Arsenic • Nitrosamines, • Polycyclic aromatic hydrocarbons 	<ul style="list-style-type: none"> • Chlorobenzene • Crotonaldehyde • Propionaldehyde • Benzaldehyde • Valeric acid • Hexanal • Fluorine • Anthracene • Pyrene • Acenaphthylene • Acenaphthene • Fluoranthene • Benz(a)anthracene • Chrysene • Retene • Benzo(a)pyrene • Indeno(1,2,3-cd)pyrene 	<ul style="list-style-type: none"> • Cadmium • Silicon • Lithium • Lead • Magnesium • Manganese • Potassium • Titanium • Zinc • Zirconium • Calcium • Iron • Sulfur • Vanadium • Cobalt • Rubidium
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- All of these chemicals have been found in in the E-Cig Aerosol
- And while we did not know this at first, Many of these are the same chemicals found in traditional cigarettes—many even causing cancer
- And while not all contain nicotine, all have many of these chemicals and toxins .

Flavors

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First way, flavors. These flavors, for the most part, aren't meant to appeal the middle-aged smoker who is trying to quit smoking. These are suppose to be appeal to young people.



In fact, the data tells us so. In 2016, 88% of high school e-cig users said they wouldn't have tried e-cigs if they hadn't come in kid-friendly or fruit flavors.

Nicotine + Brain

Disrupts Proper Brain
Development in Young
People

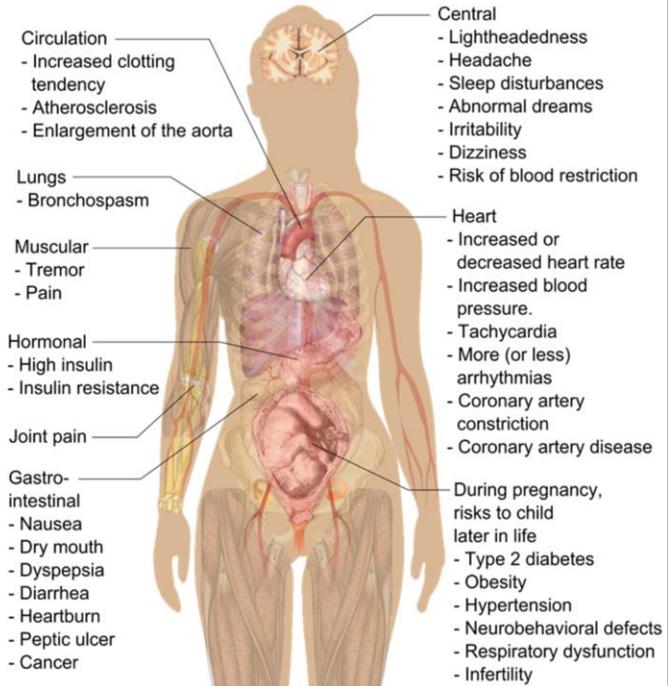
Nicotine is one of the
most **ADDICTIVE** drugs
that exist!



- Nicotine use in early adolescence causes changes in the brain that make life-long addiction much more likely for young e-cig/vape users
- Additionally, the pleasure centers in the brain creates a memory of nicotine and an appetite for it
- That appetite for nicotine, even despite it's harmful consequences, is what we refer to as nicotine addiction

Nicotine + Body

Side effects of nicotine



Cytotoxic Flavors

Causes Popcorn Lung

- Irreversible respiratory disease where airways in the lungs become irreversibly scarred and constricted, impairing breathing

Ear, Eye and Throat Irritation is common among e-cig/vape users



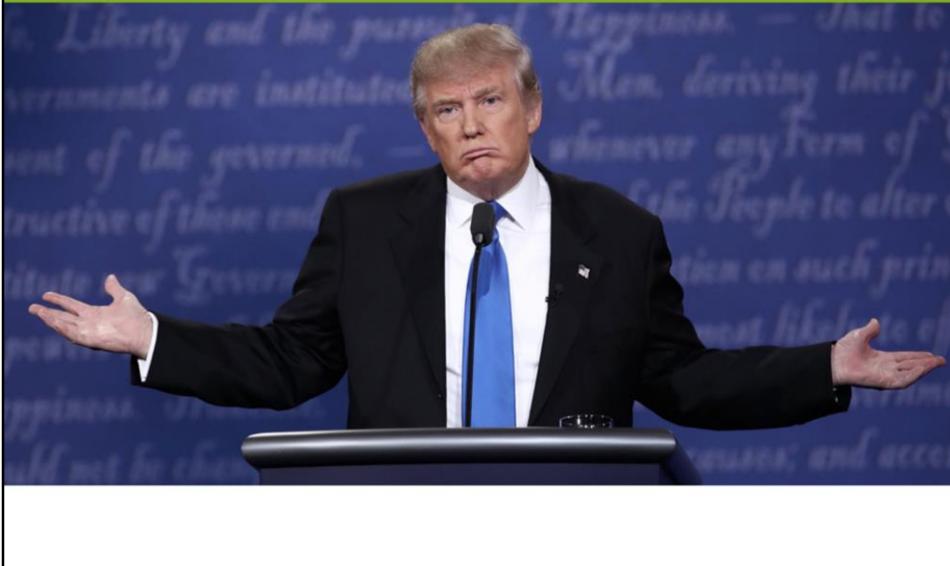
Vanilla Flavors
Cinnamon Flavors

Cherry Flavors
Buttery Flavors

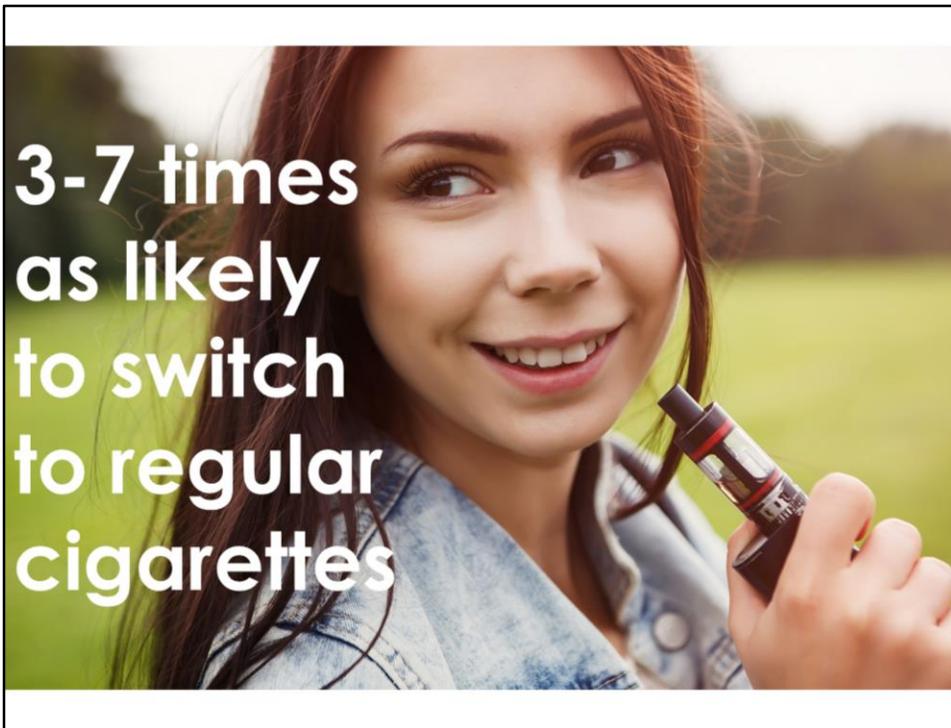
Stanford Medicine's Tobacco Prevention Toolkit

- *Many of these flavors can be found in several different e-juices. The e-juice flavor doesn't necessarily need the words "vanilla, cherry, cinnamon, or buttery" in the name.*

Long Term Effects of E-Cigs



- Since e-cig/vape products are so new and health professionals can't fast forward into the future, all of the long-term consequences of these products are impossible to predict
- Based on what we do know today from research on the chemicals found in e-cig/vapes, we can say that these products are not harmless to the user or the people around them
- For close to 20 years, health professionals did not know the long term effects of cigarette smoke either
- Just imagine what else we will know in another 10 years we have a fuller picture of all of the health consequences



Young people who start using e-cigarettes (without ever trying regular cigarettes) are 3-7 times as likely to switch to regular cigarettes in the future—this is based off of some initial research about initiative and intentions

JUUL: Significant Concerns



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You can buy 'sleeves' for your JUUL for less than \$10 on amazon—there are other accessories too.

What's in a JUULpod?



- Based on what we know about e-juice/liquid, which chemicals do you think are in the e-juice of a JUULpod?
- We are nowhere close to understanding what is in the JUULpod and how it affects the adolescent body, yet millions of devices are being sold and the company is making a profit from exposing youth to all of these chemicals!
- How many known and unknown chemicals do you think are being released from these 20 million JUULs in one month?

Stronger than E-Cigarettes/Vape Pens



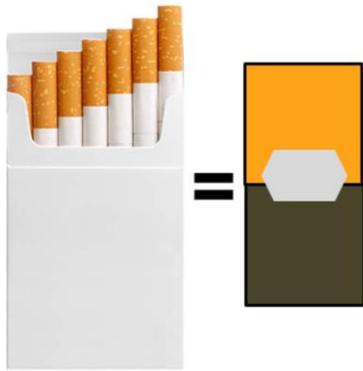
- Our biggest concern with JUULs among youth is that it delivers the same amount of nicotine that is found in a pack of cigarettes, to the body and brain.
- “JUULing” or “JUUL” is a verb used to describe someone who is using it. Someone might say, “I am going to JUUL on my way home.”
- **ALL** JUULpods contain the same amount of nicotine found in a pack of cigarettes.
- JUULs use salt-based nicotine, which helps deliver nicotine like a cigarette.
- Freebase nicotine is what you commonly find in most e-juices.
- One noticeable difference is the harshness induced by higher nicotine levels. Freebase nicotine has a higher pH level which affects the alkalinity. What this does is that it makes freebase e-liquid taste harsher as you climb the nicotine ladder. Whereas, salt nicotine have a lower alkalinity due to the benzoic acid which gives you a reportedly smoother throat hit and makes vaping at 50 mg nicotine bearable.
- The second difference is how the two travel through your body. Even though nicotine salts are known to be not the most effective way to deliver nicotine, Pax Labs have supposedly figured out a way to make it more effective than freebase nicotine. This is due to the benzoic acid added to the salt nicotine as the nicotine becomes much more readily available and more effective than traditional freebased e-liquids

- The JUULpod has exactly 59 milligrams of nicotine per milliliter. This very high amount can quickly hook youth on nicotine!
- E-juices found on the market are likely to range from 0 to 36 milligrams of nicotine per milliliter.
- JUULpods are not refillable (though, we are hearing now that kids are learning how to deconstruct the pods and fill with other substances

Reference: <https://support.juulvapor.com/home/learn/faqs/juulpods-juice>

Image: https://vaping.com/blog/wp-content/uploads/2017/06/ING_18993_01762.jpg

1 JUULpod = 1 pack of cigarettes



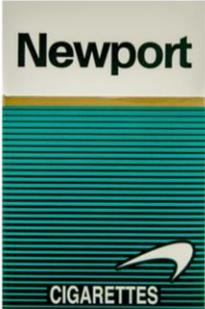
- 59 mg/ml = extremely high!

- 59 mg/ml = pack of cigarettes

- **NOTE: EVERY JUULPOD CONTAINS NICOTINE!**

- According to PAX Labs, one JUULpod contains exactly 59 milligrams per milliliter of nicotine, which is extremely high! This would be strong for the most experienced cigarette smoker.
- This amount is equal to the amount of nicotine you'll find in a pack of cigarettes, 20 to be exact. When you think of a JUULpod, think of a pack of cigarettes.
- As mentioned before, this is a high amount and can be harsh for first-time users. Our concern is that youth are being introduced to a high amount of nicotine through the JUUL device and becoming addicted as a result.
- Unlike other e-juices which may or may not contain nicotine, **ALL JUULPODS CONTAIN NICOTINE.**

Price



Newport
CIGARETTES

Cigarette Tax = \$2.52
Pack of Cigarettes = ~8.82



JUUL™
multipack
5% strength

JUUL™
JUUL device
USB charger



JUUL™
mango
5% strength

4 or 5-pack JUUL Pod = \$15.95
1 pod = 1 pack cigarettes
worth of nicotine
Not taxed

Starter Kit = \$49.95
1 device + 4 pods
Not taxed

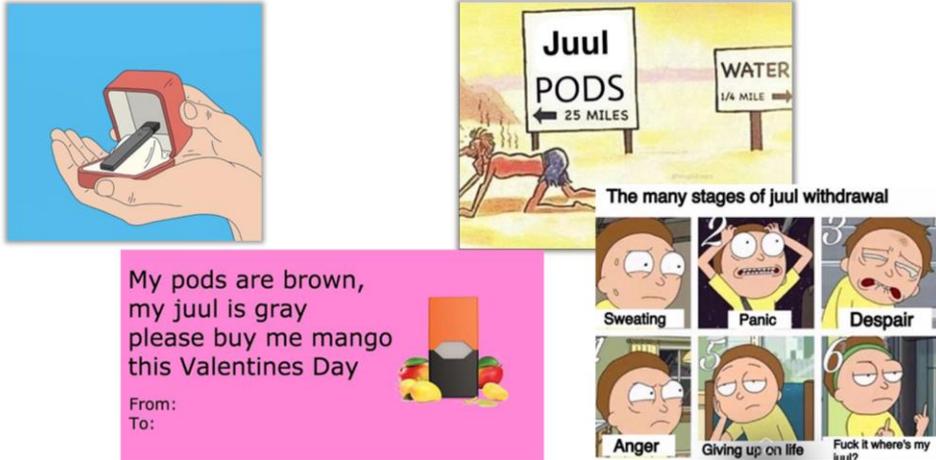
We know that when prices increase, consumption decreases – this could be a potential policy change to help reduce youth initiation/use.



JUUL owns approximately 73% of the e-cig market—more than any other e-cig company EVER
Their sales have increased by 600% since just 2017!

JUUL's Social Media Targeting

Bigger Instagram accounts giving "shout-outs" to JUUL and reposting of Snapchat videos of youth using it



- There has been increasing concerns around how youth are being targeted on social media
- Some Instagram accounts repost Snapchat videos of youth using it and give shout-outs to JUUL.
- Question to ask (*click*): why are they supporting the use of cartoons and memes to promote the product?
- Youth are being targeted through memes and cartoons, such as the ones you see here
- Question to ask (*click*): how might these images send harmful messages to youth?

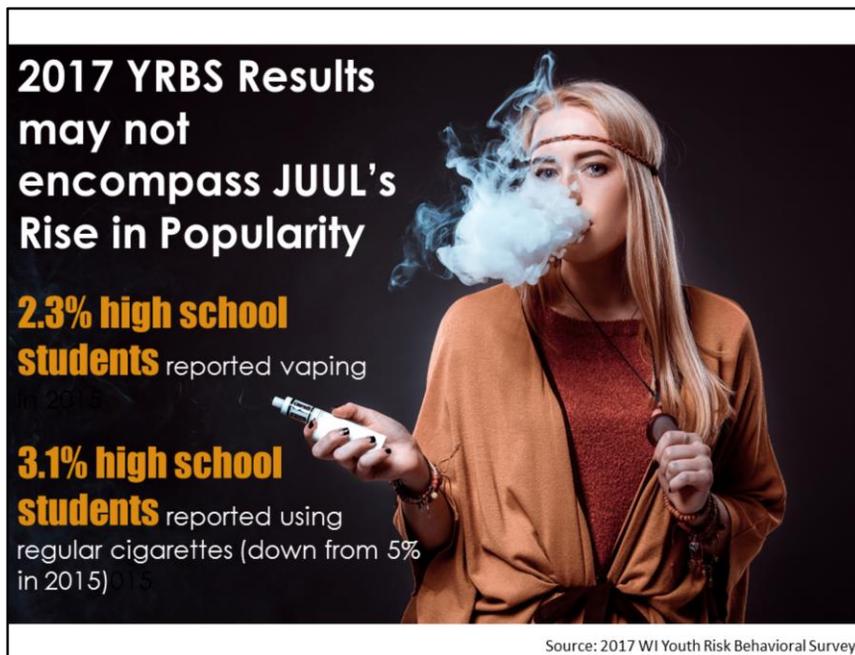
Some possible answers include:

- (Left) Equating the JUUL's value to that of a human life.
- (Middle) Not taking JUUL addiction seriously.
- (Right) Treating JUUL as a symbol of love and making room for it in our culture.



Kids told us:

- There is a difference between vaping and JUULing—they don't see JUULs as e-cigarettes
 - This is important because of the way we frame the behavior and ask survey questions
- The reasons why kids are using JUUL and other e-cig products are different
 - Kids use vaping products (tradition e-cigs/vape pens/mods) to do cool tricks with the clouds of 'aerosol' they breath out—they post videos and picture to social media to get mentions/retweets/likes
 - Kids are JUULing to get a head buzz (refer back to the high nicotine content)
- Kids say their peers are using these products in class w/o getting caught
 - They say kids clip them inside of the collar or sleeve and blow the aerosol back into their clothing
 - JUULs don't have a large plume of aerosol like we see with other e-cig products and the smell isn't as prominent as well
- Kids say their peers are also using these products in the bathrooms
 - Bathrooms are sometimes referred to as "JUUL rooms"



**2017 YRBS Results
may not
encompass JUUL's
Rise in Popularity**

**2.3% high school
students** reported vaping

**3.1% high school
students** reported using
regular cigarettes (down from 5%
in 2015)

Source: 2017 WI Youth Risk Behavioral Survey

Since Lodi's YRBS was administered before the rise in popularity of JUUL, this data isn't really reflective to what's actually going on in Lodi.

We assume this percentage of kids using e-cigs and JUUL is significantly higher than 2%

Lodi High School FACT Group



Emily Oetzman, LHS Senior
Lacey Brooks, LHS Junior

For more info on FACT, visit www.FACTmovement.org
Or follow them on Facebook, Twitter, or Instagram @FACTmovement







What You Can Do

NO REAL REGULATIONS



- E-cig products, including JUUL, are not regulated the same as cigarettes.
- They are able to advertise however they see fit (upper left photo)—you can see the woman in the ad is relatively young and wearing a letter jacket. The colors of the ad also appeal to young people.
- E-cig companies can be flavored, there's no enforcement regarding the nicotine content it claims to have, and companies aren't required to list their ingredients (and if they do, there's no enforcement to prove what is truly in the products)
- These products can be used where regular smoking is prohibited. Only about 12 communities around the state of WI have included e-cigarette products in their smoke-free air law (Madison & Milwaukee being two)
- Nicotine products are not required to place a warning label on their products—thus, kids may assume these products either don't contain nicotine or they are somehow 'safe' since they don't have a warning.



Update school tobacco policies to reflect the new e-cig products and make it broad enough to encompass any new products that may hit the market in the future.

NO SMOKING

Including

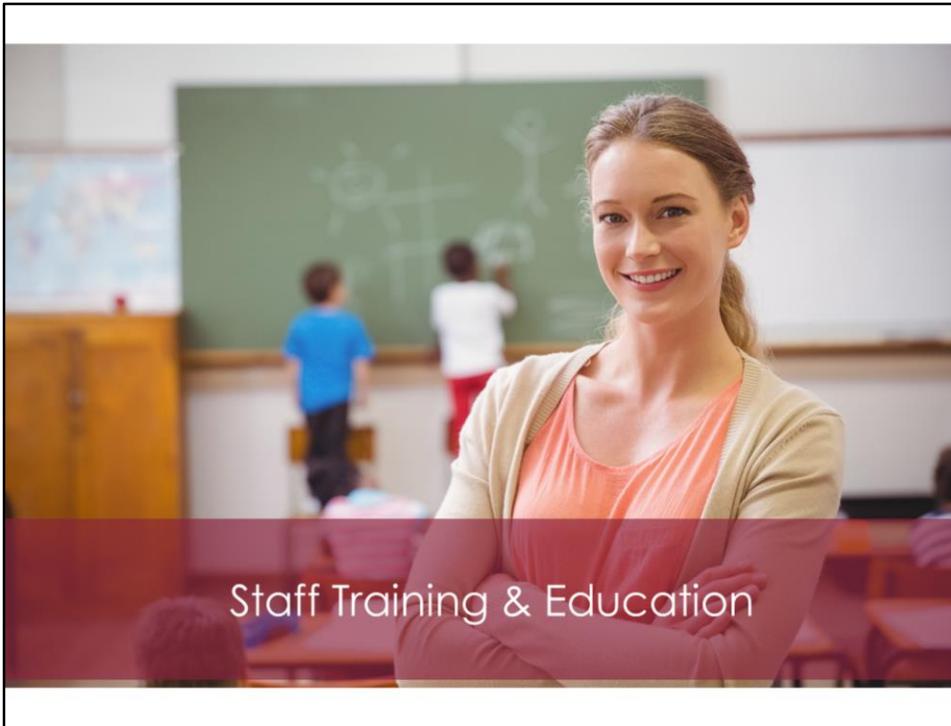
ALL ELECTRONIC NICOTINE DELIVERY DEVICES

Public Health
MADISON & DADE COUNTY
Healthy People. Healthy Places

Per Madison General Ordinance 23.05
Public Health Madison & Dade County (609) 266-4821
Madison Police Department, Non-Emergency (609) 255-2345

**Include Electronic Cigarettes in Municipal
Smoke-Free Air Policies**

Could update Lodi's Smoke-free air ordinance to include these products
By including these products in such ordinance, we are sending the message to young people that these products are NOT safe (changing social norms)



Continued education and skill building among educators will be key in the near future.

Will be visiting both the Middle and High schools in Lodi to educate staff!



Update tobacco curriculum to reflect e-cigs and JUUL

Stanford Tobacco Prevention Toolkit:

<https://med.stanford.edu/tobaccopreventiontoolkit/E-Cigs.html>

- Free, many modules and 'homework'/skill building activities

CATCH my breath High School Curriculum: <https://catch.org/units/catch-my-breath-high-school>

- Sponsored by CVS Pharmacy (completely tobacco and nicotine free-do not sell these products, and wants to invest in youth prevention)
- Free when you have your principals consent
- Also has a Middle School Curriculum and a PE Supplement (for schools who have limited health classes)

Take Action



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Thank you!

Please feel free to contact me with questions about this presentation or how to get in contact with your local tobacco free coordinator!