

The Teen-Age Vaping Epidemic: how did we get here and how do we end it?

Research Summary

Naomi B. Bishop, MD

Background

- In 2018, 1 in 4 high school students and 1 in 10 middle school students reported vaping within the last 30 days
- Although the bathrooms were the most frequent locations for vaping, many confessed to sneaking a vape in class while the teacher's back was turned
- What began for some as innocent experimentation rapidly turned into serious addiction for many
- Parents were reassured that vaping carried minimal risk and they turned a blind eye until it was obvious the industry was misleading them
- They mobilized to raise awareness of the hazards associated with vaping and appealed to legislators to take action


Company needs to reinvent itself

Goals:

- Realign market share
- Appeal to a different audience: 20-30-year-olds (MILLENNIALS)
- Slick, trendy ads aimed at this demographic to attract their attention

But...

- Flavors named *Fruit Cereal* and *Ice Cream* were added to disguise the sharp and bitter taste of burnt tobacco in cigarettes. This made e-cigarettes easier for non-smokers to try and habituate to
- The nicotine was reformulated to the more potent “salt” and the content in each pod was tripled....
- The presence and concentration of nicotine in vape products was masked; users were unaware they were consuming it at all
- The JUUL is born: appeals to smokers trying to quit and is highly addictive for the tobacco naïve - a winning formula

A woman with long blonde hair is shown in profile, looking out a window. She is holding a black Juul e-cigarette in her mouth. The background shows a window with a view of green foliage outside. The room is dimly lit, with some framed pictures visible on the wall behind her.

She Couldn't Quit Smoking. Then She Tried Juul.

Millions embrace e-cigarettes as smoking cessation aids. Will restricting the devices for teenagers put former adult smokers who vape at risk to start again?

The safety, benefits and risks of vaping to everyone, not just in teens, remain highly contentious issues, even among health experts, despite evidence that suggests the harms outweigh the benefits.

The e-cigarette industry is funded in large part by big tobacco who sees the vaping craze as a means to retrieving the earnings lost from a highly effective nation-wide anti-smoking campaign.

It has found ways to evade many of the regulatory controls by the FDA and other governmental agencies.



2015: FDA forbids marketing of the product as “safer” than cigarettes. They were complicit in the conceptual evolution from smoking cessation tool to low-risk, youth-targeted experience

The New York Times

WARNING: This product contains nicotine.
Nicotine is an addictive chemical.

Juul Says Its Focus Was Smokers, but It Targeted Young Nonsmokers

The company planted the seeds of a public health crisis by marketing to a generation with low smoking rates, and it ignored evidence that teenagers were using its products.

our finest product

WHY SNOW+ COFFEE?

As a coffee lover ourselves, we can't live without coffee in our daily life. But coffee is not always accessible everywhere. So we think, why don't we create a device that can be carried every day in your pocket, like the super nano espresso machine, so that you can enjoy your coffee anywhere you want hassle-free. BAM!! Here it goes the SNOW+ Coffee! The perfect coffee pal for your daily energy needs! Like my colleague always said, "gives me enough coffee, I can conquer the world!" Let's make this world a better place with SNOW+ Coffee.

Copying a Winning Formula

Advertisers recognize the allure and popularity of the vape pod and attempt to duplicate



SNOW+ COFFEE

YOUR PORTABLE COFFEE BARISTA

Available Now

[ages/redirecting-you-to-snow-in-seconds](#)

This does not explain how it became the rage among middle school & high school students...

...or does it??

Why were teens so quickly and easily lured into the JUUL craze?

The Science: unique features of adolescence

Brain Development:

- Brain is rapidly developing new connections; pre-frontal cortex and amygdala, centers for emotion and impulsivity, are not fully developed
- Connections cannot be eradicated; they can only be laid over with alternatives

Hallmarks of adolescent behavior:

- Short-term rewards supersede long-term consequences; invincibility and curiosity favor experimentation and risk-taking
- Testing limits, especially if being caught is unlikely
- Self-consciousness and dependence on acceptance by peers (peer pressure to conform); belonging to a social group is central to identity
- Communicating with one's peer group using unique forms of communication, elusive to outsiders
- Conflict between strong desire for autonomy from parents, yet still influenced by authority (teachers coaches, priests, rabbis)

The Science: unique features of adolescence (cont'd)

Hormonal Surges

- Body image, gender & sexual identity are evolving amid rapid, uncontrollable physical changes
- Males more aggressive; females focused on overall appearance, breast size, weight, clothing

Behaviors and Attitudes

- Distinct groups: the cool, popular, and highly visible extroverts vs. the outsiders, unpopular, nerdy, academic-oriented
- Group is fixed, very hard to convert. Belonging depends on conforming to group norms
- Defying adults and getting away with it are rites of passage
- "Self-medicating" to help navigate the turbulence of adolescence is common – increasing vulnerability to addiction, both physiologically and psychologically (e.g., video games and alcohol)
- Pathologic behaviors (eating disorders, oppositional-defiant behaviors) manifest at this age

Quotes from Middle & High Schoolers (from the internet)

“But, to answer your question, it’s definitely different from middle [school] 10 years ago. For one thing, vaping. For a second thing, airpods. And that’s pretty much it, sadly.”

“You can Google vaping and airpods, and then imagine oily, skinny, 5-foot-tall boys and girls doing it/wearing them. Also kids do drugs and drink alcohol. Everyone has air pods or jewels [sic].”

“JUUL and other vapes have shifted from a healthier alternative for chronic smokers to a quick way for bored minors to catch a buzz.”

“Everyone has always tried to fit in one way or another, and I feel as if this is the new “thing.” I feel like the majority of people use it just to not make themselves look out of place.”

“Kids get caught all the time at school and still continue to do it.”

“Just about everyone I know has vaped at least a few times in their high school career, and I’ve lost more than a few friendships by not joining in.”

“Vape joke: ‘What are toilets doing in the JUUL room?’ ”

What the experts are saying

The **social component** of vaping is thought to be a compelling driver in the uptick in use. Vaping devices and flavors are easy to share and borrow, which allow youth to treat it as a casual commodity. Hundreds of YouTube channels, websites, and social media accounts are dedicated to vaping, some with over a million subscribers.

“It’s like treating a patient who has stopped heroin but wants to inject himself with an empty needle.”

“This is the next teenage epidemic and by the time we figure the long-term consequences out, a whole generation of kids, their health is going to be impacted,”

“Teens who use nicotine may be more prone to mood disorders, due to the drug's effect on how the body uses and processes serotonin, a 'happiness hormone.' Products containing nicotine may have potentially severe consequences for teen addiction, cognition, and emotional regulation.”

“When a student is found to be vaping or Juuling, our process is to give them some type of counseling program. We have counselors. Our nurses are involved. It’s a whole wrap-around service.”

CDC Guidance

Nicotine can harm the developing adolescent brain. The brain keeps developing until about age 25.

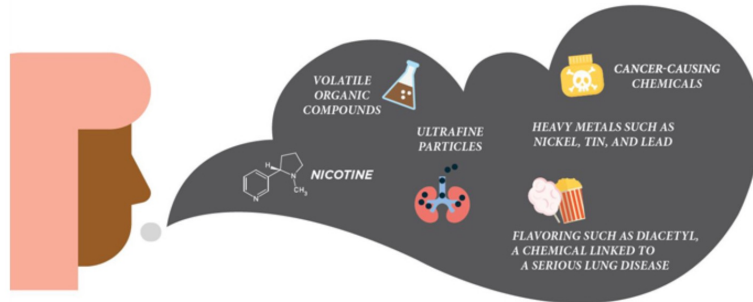
Using nicotine in adolescence can harm the parts of the brain that control attention, learning, mood, and impulse control.

Young people's brains build synapses faster than adult brains. Nicotine changes the way these synapses are formed.

Using nicotine in adolescence may also increase risk for future addiction to other drugs.

Children and adults have been poisoned by swallowing, breathing, or absorbing e-cigarette liquid through their skin or eyes. Nationally, approximately 50% of calls to poison control centers for e-cigarettes are for kids 5 years of age or younger.

Some e-cigarette flavorings may be safe to eat but not to inhale because the gut can process more substances than the lungs.



NYC Board of Education Guidance

Mostly punitive, fear mongering

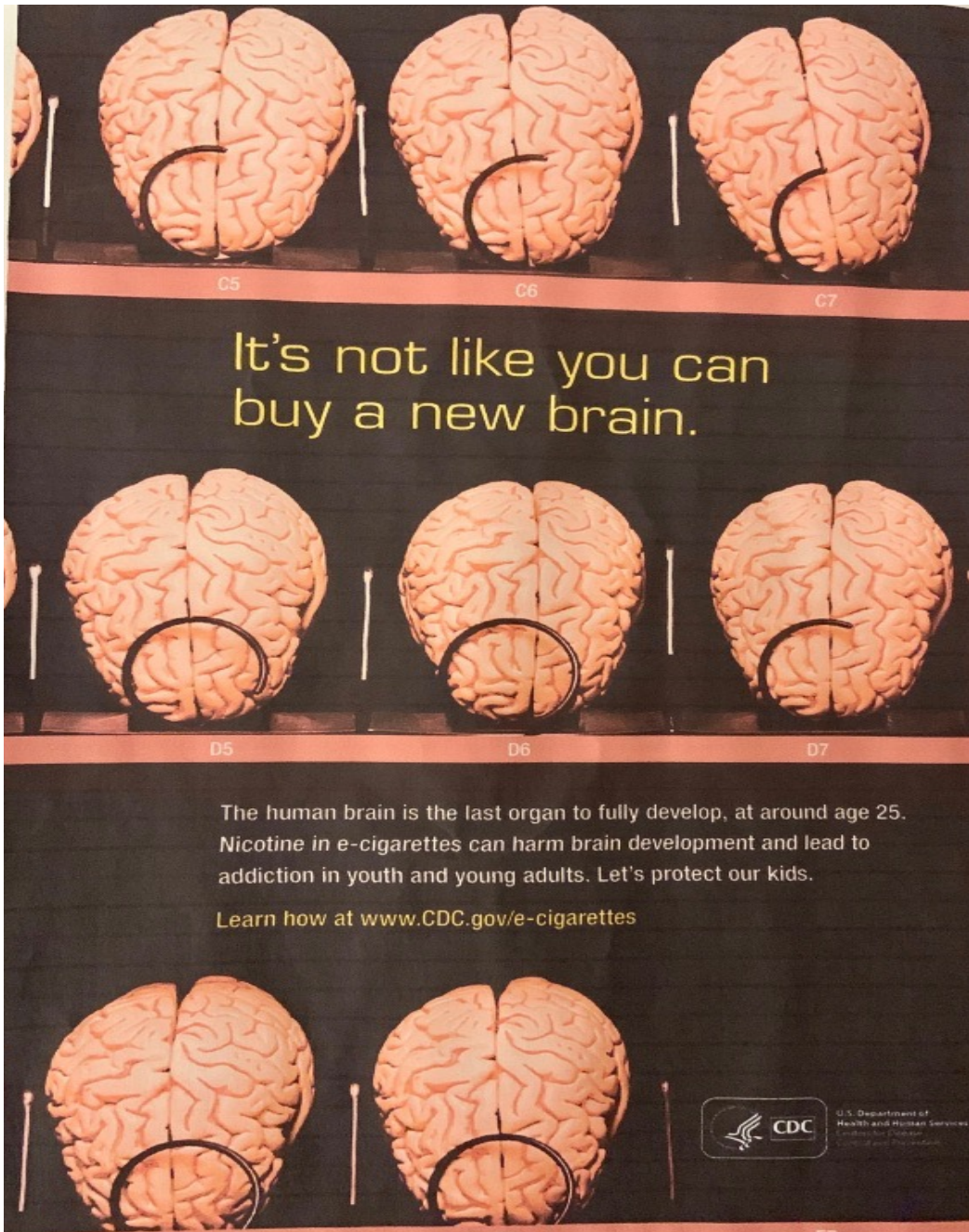
Stress injury to the developing brain and the effects on the future (family, career)

Explain the risk of lung damage

Warn students of consequences if caught vaping (suspension, expulsion)

Relegate vaping education to the gym/health teacher (whom no one takes seriously)

ONE educational event per year required to “check off the box”



What parents are saying

"If e-cigarettes were romaine lettuce, they Would be taken off the shelves." (PAVe website)

"If you don't protect your kids from vaping, who will? (PAVe website)

"Adolescents care about what their parents think and will take fewer risks when communication lines are kept open."

Dr. Lisa Damour, Psychologist

"Addiction runs in my family and I worry about my son. Of course, I worry about the damage that the chemicals can do to his lungs and body as well."

"We won't end the youth e-cigarette epidemic as long as flavored and high-nicotine products, including Juul's, continue to be sold."



Vaping Companies & Big Tobacco Want To Hook Our Kids.

WE WANT TO STOP THEM.

Parents Against Vaping e-cigarettes (PAVe) is a national advocacy and education organization powered by volunteers.

PAVe, a national anti-vaping advocacy group, was formed in 2017 when 3 New York City parents learned that a representative from JUUL was unknowingly permitted to give a vaping presentation to their sons' high school class. During the talk, the teens were assured that vaping was "totally safe."

Insights gained and lessons learned

The challenge was originally framed as, “How might we decrease adolescent PICU admissions for vaping-related lung injury? My research suggests that the strategy most likely to effect meaningful change is to prevent teens from trying e-cigarettes in the first place.

Major stakeholders: MIDDLE SCHOOLERS and their **PARENTS**

Mixed messages and **misinformation**, combined with **deception** are common themes: JUUL manufacturers deceived the public about their marketing focus, the nicotine content, and safety of vaping. Kids are deceiving their teachers and parents about their vaping behaviors. Communication channels are blocked.

Analogous Research: Tackling the vaping epidemic in teens led me to explore the appeal of the iPhone to millennials. JUUL has been called “the iPhone of e-cigarettes”.

Brand intimacy “leverages and strengthens the emotional bonds between a person and a brand,” which could ultimately lead to strong sales and brand loyalty. In fact,...the most intimately connected brands generate billions more in revenue and profits compared to those that have less of an intimate connection with customers. (Fortune Magazine on why Apple is so popular among 18-24-year-olds and Millennials)

Insights gained and lessons learned (cont'd)

Current efforts are focused on the **long-term effects of addiction on brain development and damage to lungs**. This may resonate with parents but is unlikely to have a major impact their children's behavior, based on inherent developmental and social characteristics of adolescence.

Current strategies lack the **emotional bonding** criteria and **age-appropriate communication channels** essential for implementing a high-impact solution that will actually **change behavior**.

Synthesis

Involving teens who have successfully quit vaping and their role models in the conversations and planning process is more likely to yield strategies that resonate.

Channels of communication that target teens directly and provide a supportive community (make it cool to not JUUL) should be integrated into the solution.

Teen nicotine addiction must not be overlooked. However, sustainable solutions are complex and require a great deal more expertise, resources, time, and money than prevention.

South Park Takes on the Vaping Epidemic

