



JUUL and Youth: Rising E-Cigarette Popularity

What is JUUL?

The term “electronic cigarettes” covers a wide variety of products now on the market, from those that look like cigarettes or pens to somewhat larger products like “personal vaporizers” and “tank systems.” Instead of burning tobacco, e-cigarettes most often use a battery-powered coil to turn a liquid solution into an aerosol that is inhaled by the user. One e-cigarette device, called JUUL, has become increasingly popular since its launch in 2015.

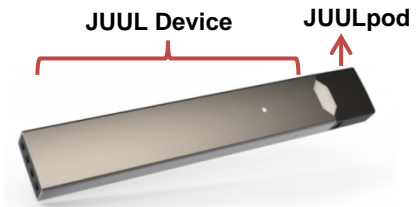


Image from JUUL website, accessed 1/24/18



JUULpods. Image from JUUL website, accessed 1/24/18



JUUL device charging in the USB port of a laptop. Image from JUUL website, accessed 1/24/18.

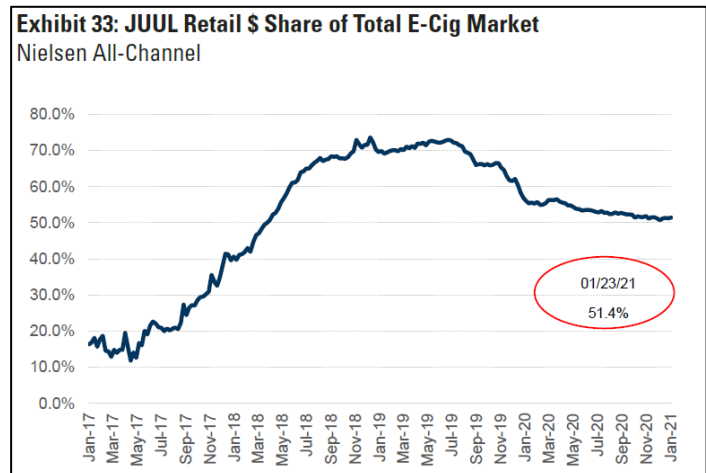
JUUL Labs produces the JUUL device and JUULpods, which are inserted into the JUUL device. In appearance, the JUUL device looks quite similar to a USB flash drive, and can in fact be charged in the USB port of a computer. According to JUUL Labs, all JUULpods contain flavorings and 0.7mL e-liquid with 5% or 3% nicotine by weight; JUUL Labs claims that the 5% pods contain the equivalent amount of nicotine as a pack of cigarettes. Until November 2019, JUULpods were available in eight flavors: Mango, Fruit, Cucumber, Creme, Mint, Menthol, Virginia Tobacco and Classic Tobacco.¹ Until prohibited by a January 2020 Enforcement Guidance from the FDA, other companies also sold “JUUL-compatible” pods in additional flavors; for example, the website Eonsmoke sold JUUL-compatible pods in Blueberry, Silky Strawberry, Mango, Cool Mint, Watermelon, Tobacco, and Caffé Latte flavors.² There are also companies that produce JUUL “wraps” or “skins,” decals that wrap around the JUUL device and allow JUUL users to customize their device with unique colors and patterns (and may be an appealing way for younger users to disguise their device).



JUUL skins. Images from <https://www.mightyskins.com/juul/>

In mid-2016, the dollar sales share for JUUL products was less than 5%*, the lowest compared to products sold by the main companies in Nielsen-tracked channels. However, by the end of 2017, JUUL sales had surpassed all other companies’ products, including the e-cigarette brands manufactured by the major tobacco companies.³ At its peak popularity in late 2018 and early 2019, JUUL sales comprised over 70% of the market.⁴ Today, JUUL sales comprise about half of e-cigarette sales in Nielsen-tracked channels.

In December 2018, Altria, which makes the most popular cigarette among youth (Marlboro), announced that it was purchasing



Source: Nielsen Total US xAOC/Convenience Database & Goldman Sachs Global Investment Research

* Tracked data includes mass channel and convenience stores; does not include online sales or sales from tobacco and vape shops.

a 35 percent share in JUUL Labs for \$12.8 billion and valued the company at \$38 billion.⁵ In 2019, the CEO of JUUL stepped down and was replaced by a top executive from Altria.⁶ As JUUL has surged in popularity, other companies have sought to mimic JUUL's sleek design and pod-based system, with new devices such as MLV's PHIX, Mylé Vapor's Mylé, Altria's MarkTen Elite[†], Reynolds' Vuse Solo, and ITG Brands' myblu.⁷ As of September 2018, researchers had identified at least 39 JUUL "knock off" devices.⁸ JUUL has filed patent infringement complaints against many of these copycat devices.⁹

JUUL's Impact on the Youth E-Cigarette Epidemic

JUUL's rise directly coincided with, and was responsible for, an unprecedented surge in youth e-cigarette use. According to the National Youth Tobacco Survey (NYTS), high school e-cigarette use increased by 135% from 2017 to 2019 (from 11.7% to 27.5%).¹⁰ Researchers at the University of Michigan who conduct another national youth survey, the Monitoring the Future Study, found that the increase in youth nicotine vaping from 2017 to 2018 was the single largest one year increase in youth use of *any substance* in the survey's 43-year history.¹¹ According to the CDC, "The rise in e-cigarette use during 2017-2018 is likely because of the recent popularity of e-cigarettes shaped like a USB flash drive, such as JUUL; these products can be used discreetly, have a high nicotine content, and come in flavors that appeal to youths."¹² While high school e-cigarette use declined in 2020 to 19.6%, an alarming 3.6 million kids are still using e-cigarettes – the same number as when the U.S. Surgeon General first called youth e-cigarette use an "epidemic" in 2018.¹³ Among 10th and 12th grade e-cigarette users, JUUL remained the most popular e-cigarette brand in 2020, preferred by 41.1% of users (a decrease from 58.7% in 2019).¹⁴

News articles, letters from school officials, and anecdotal evidence indicate that JUUL has gained popularity among youth and young adults across the country, from middle schools to college campuses. A 2018 study found that nearly one-fifth of youth (ages 12-17) surveyed reported having seen JUUL used in their school.¹⁵ News stories attribute JUUL's sleek and discreet design to its appeal among this population. For example:

"High school and college students are rushing to retailers to buy the product because its discreet design makes it easy to hide from parents and teachers while also giving the user a big hit of nicotine. Some students have bragged on social media of using the JUUL in class, even though e-cigarettes are banned indoors at most schools." – Pittsburgh Post-Gazette¹⁶

"An editor for New York University's student newspaper documented JUUL's rising on-campus popularity, even in dorm rooms. A student newspaper at the University of Illinois called JUUL a "new epidemic is sweeping across campus." And in suburban D.C., a high school's principal took doors off its bathroom stalls to keep students from using drugs inside —namely JUUL." – USA Today¹⁷

"One reason JUUL and vape pens are so popular among teens currently might be that they can be used indoors without attracting unwanted attention or creating a stench... On Twitter, teens post about their usage in school. The most brazen of them fire up their e-cigarettes while their teachers' backs are turned." - NPR¹⁸

JUUL's Flavored Products are Popular Among Kids

Research shows that flavors play a key role in youth use of e-cigarettes. According to the NYTS, 3 million youth—82.9% of youth e-cigarette users—report they are using flavored products.¹⁹ An earlier survey from the FDA's Population Assessment of Tobacco and Health (PATH) study found that 97% of current youth e-cigarette users reported using a flavored e-cigarette in the past month and that 70% of current youth e-cigarette users say they use e-cigarettes "because they come in flavors I like."

The evidence is clear that all e-cigarette flavors appeal to youth, and that if any JUUL flavors are left on the market, kids will shift from one flavor to another. In late 2018, amid pressure from regulators, JUUL

[†] Altria pulled the MarkTen Elite device from the market shortly before announcing its plan to purchase a minority share of JUUL Labs.

pulled all of its flavors except tobacco, mint and menthol from retail shelves,²⁰ but this did little to reduce youth use because mint and menthol still have youth appeal and the rest of JUUL's flavors remained available online. From 2018 to 2019, youth use of fruit flavors fell, while youth use of mint and menthol flavors increased by 50%.²¹ Among 10th and 12th grade JUUL users, mint was the most popular flavor in 2019.²² After release of this data documenting the popularity of JUUL's mint flavor among youth, JUUL announced that it was ending the sale of its mint pods in addition to online sales of its other restricted flavors, leaving only its tobacco and menthol flavors available.²³

Shortly after JUUL's actions, the FDA announced it would prioritize enforcement of flavored cartridge-based products like JUUL, except for tobacco and menthol flavors, essentially mimicking JUUL's own policy. FDA's decision to exempt menthol from its Enforcement Guidance gave companies like JUUL a pathway to continue to hook over one million youth with menthol-flavored products alone. In 2020, 37% of youth e-cigarette users, including 44.5% of users of pre-filled pods or cartridge systems like JUUL, reported using menthol-flavored products.²⁴ E-cigarette sales data show a similar pattern, with menthol-flavored e-cigarette sales increasing by 59% from January 26, 2020 to December 27, 2020 and sales of menthol-flavored cartridge-based products like JUUL increased by 62% over this same time. Menthol is now the top selling e-cigarette flavor, comprising 42% of the market as of December 2020.²⁵ These trends come as no surprise since the tobacco industry has known for decades that menthol appeals to youth. The FDA has previously concluded in its report on menthol cigarettes, that menthol increases the number of teens who start smoking and who become regular smokers.²⁶

JUUL and Youth Nicotine Addiction

JUUL popularized a new generation of high-tech e-cigarettes that smoothly and effortlessly deliver a high dose of nicotine in sweet flavors. Nicotine is a highly addictive drug that can have lasting damaging effects on adolescent brain development.²⁷ The Surgeon General concluded that, "The use of products containing nicotine poses dangers to youth, pregnant women, and fetuses. The use of products containing nicotine in any form among youth, including in e-cigarettes, is unsafe."²⁸

JUUL pioneered an e-liquid formulation that delivers nicotine more effectively and with less irritation than earlier e-cigarette models. Researchers estimate that JUUL, which contains the nicotine equivalent of a pack of 20 cigarettes in each 5% pod, is three or more times as powerful as most e-cigarettes on the market prior to 2015.²⁹ According to the company, the nicotine in JUUL is made from "nicotine salts found in leaf tobacco, rather than free-base nicotine," in order to "accommodate cigarette-like strength nicotine levels."³⁰

JUUL's competitors, seeking to emulate the company's success, have since flooded the U.S. market with similar high nicotine e-cigarettes, resulting in what some researchers have referred to as a "nicotine arms race."³¹ The 5% nicotine pods sold by Juul and its competitors far exceed nicotine level limits set by many other countries. An analysis of e-cigarette sales in Nielsen-tracked channels found that products with 5% nicotine or higher increased from 0% of dollar sales in 2013 to 31.8% in 2017, and then doubled to 66.4% in 2018. In 2018, fruit-flavored e-liquids had a higher mean nicotine concentration (4.7%) than any other flavor category.³²

According to a 2018 Surgeon General advisory on e-cigarette use among youth, the nicotine salt technology that JUUL uses allow users to inhale high levels of nicotine more easily and with less irritation than e-cigarettes that use free-base nicotine. As a result, it is easier for young people to initiate the use of nicotine with these products.³³ News stories from across the country have documented stories of youth struggling to break their addiction to JUUL, and national survey data confirms a growing crisis of youth addiction. Kids are no longer just experimenting with e-cigarettes, but are using them frequently, an indicator of serious addiction. In 2020, 38.9% of high school users (up from 34.2% in 2019) and 20% of middle school users (up from 18% in 2019) were frequent users of e-cigarettes, reporting use on at least 20 of the preceding 30 days. Alarming, 22.5% of high school users and 9.4% of middle school users reported daily use. This amounts to 1.3 million middle and high school students who were frequent users of e-cigarettes, including over 730,000 daily users.³⁴ Adolescents are more likely to experience nicotine

dependence at lower levels of exposure than adults and can feel dependent after just minimal exposure and within a relatively short period of time.³⁵ One study estimated that youth could meet the threshold for nicotine addiction by consuming just one quarter of a JUULpod per day.³⁶

JUUL's Youth-Friendly Marketing Launch

When JUUL first launched in 2015, the company used colorful, eye-catching designs and youth-oriented imagery and themes, such as young people dancing and using JUUL. JUUL's original marketing campaign included billboards in New York City's Times Square, YouTube videos, advertising in Vice Magazine, launch parties and a sampling tour. According to the *New York Times*, "Cult Collective, the marketing company that created the 2015 campaign, "Vaporized," claimed that the work "created ridiculous enthusiasm" for the campaign hashtag, part of a larger advertising effort that included music event sponsorships and retail marketing."³⁷



JUUL billboard in Times Square, New York City, 2015. <https://www.spencer-pederson.com/work-1/2017/2/23/juul-go-to-market>

Social media continued to fuel JUUL's popularity, with lasting effects. JUUL was one of the first major e-cigarette brands to rely heavily on social media to market and promote its products. JUUL's initial marketing expenditures in traditional channels were modest compared to competing brands, and these expenditures decreased as the brand increased content and received more promotion on social media channels like Instagram and Twitter.³⁸ A study in *JAMA Pediatrics* found that 8 out of 10 of JUUL's Twitter followers in April 2018 were between the ages of 13 to 20.³⁹ Additionally, user-generated posts that tag (e.g., #JUULvapor, #doit4JUUL) and feature JUUL do not have any restrictions. These kinds of social media posts can increase exposure to pro-e-cigarette imagery and messaging, by making JUUL use look cool and rebellious.

JUUL officials claim that its popularity among youth is purely accidental and that the product's viral social media presence following its launch was beyond the company's control. Ashley Gould, Chief Administrative Officer of JUUL Labs, said that the explosion of youth users "was not anticipated and completely unexpected to us."⁴⁰ Gould has noted that, "All of the things you see on social media, we have absolutely nothing to do with."⁴¹ Contrary to these claims, a *New York Times* investigation interviewed a former senior manager at JUUL who "said that he and others in the company were well aware the campaign launch might appeal to youth. After Juuls went on sale in June 2015, he said, the company quickly realized that teenagers were, in fact, using them because they posted images of themselves vaping Juuls on social media."⁴²



Over 700 lawsuits against JUUL Labs (JLI) have been filed across the country, claiming that the company marketed its products to youth, promoted nicotine use, and failed to warn that its nicotine products are more addictive than tobacco cigarettes. In addition, 39 state attorneys general are leading a multi-state investigation into JUUL's health claims and marketing tactics targeting minors and 15 state attorneys general have sued JUUL for targeting youth in their states. In April 2018, the FDA sent an official request for information to JUUL Labs to obtain more information about the youth appeal of the product, including the company's marketing practices.⁴³ JUUL subsequently updated its marketing code⁴⁴ with the purported goal of limiting youth exposure to its advertising. In June 2018, JUUL announced a new social media policy that would no longer use models on those platforms, but instead would feature former smokers

who switched to JUUL.⁴⁵ FDA later called on JUUL and other major e-cigarette makers to develop “robust plans on how they’ll convincingly address the widespread use of their products by minors.”⁴⁶ As part of its response to FDA, in November 2018 JUUL announced the suspension of its official social media accounts on Instagram and Facebook, and limits on its Twitter posts to “non-promotional communications only,” as well as age-restricting its Twitter account. In this same announcement, JUUL noted its coordination with the major social media platforms to attempt to “police” content and “remove youth-oriented social media content from third-parties or users.”⁴⁷ JUUL’s marketing to youth was also the subject of a Congressional hearing in 2019.⁴⁸

Availability and Accessibility of JUUL

JUUL devices and JUULpods are available for sale on JUUL’s website and other online retailers as well as in convenience stores, vape shops, and tobacco retailers. According to the 2020 Monitoring the Future Survey, 61% of 10th grade students say it would be easy to get a JUUL device.⁴⁹ A 2018 study found that among surveyed youth JUUL users (ages 12-17), half had gotten JUUL from a social source.⁵⁰ Advocates have shared stories of kids pooling together money to share a device and sell “hits” from the device to recoup the cost.

While most youth e-cigarette user (72.2%) report getting their e-cigarettes from friends and other social sources, some underage minors are able to buy their own e-cigarettes. According to the 2018 NYTS, 16.5% of middle and high school e-cigarette users under 18 report obtaining e-cigarettes from a vape shop in the past month, 9.8% from a gas station or convenience store, and 5.7% from the Internet.⁵¹ In April 2018, the FDA sent warning letters to 40 retailers across the country for illegally selling JUUL products to minors.⁵²

Campaign for Tobacco-Free Kids, March 31, 2021 / Laura Bach

¹ JUUL Website, accessed November 12, 2018, <https://www.juul.com/shop/pods>.

² Eonsmoke website, accessed January 24, 2018, <https://www.eonsmoke.com/12-buy-juul-compatible-pods-capsules>.

³ Nielsen Total US xAOC/Convenience Database & Wells Fargo Securities, LLC, in Wells Fargo Securities. Tracked data includes mass channel and convenience stores; does not include online sales or sales from tobacco and vape shops.

⁴ Nielsen Total US xAOC/Convenience Store Database & Goldman Sachs Global Investment Research.

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