I don’t need to tell you smoking cigarettes is bad for you. I don’t even need to tell you nicotine is bad for you. This isn’t that kind of podcast. We’ve all sat through the anti-drug assembly’s in school, all saw the commercials throughout the 2000’s full of monsters and graphic images of black lungs and patients laying in the hospital post-surgery, lamenting their lifetime of cigarette use and crippling nicotine addictions. These messages seemed to be successful, with Gen Z being on track to potentially be the first Tobacco free generation in history of the early 2010’s. But then a new trend came along. Gone were the days of smokers huddled in the cold, trying to get lighters to catch for a flame. E-cigarettes have gone far beyond smoking cessation products and became a pop culture phenomenon that has potentially spawned a whole new generation of nicotine users in the United States, particularly thanks to a company called Juul.

Like I said, this isn’t a podcast about health risks, but how marketing and misinformation created a whole generation of lifetime tobacco consumers just as public health professionals were optimistically looking towards our first smoke-free generation. Using age old messaging and techniques on a new platform, Juul made itself a household name across the United States in just a few years, even becoming its own verb. Kids didn’t smoke, they didn’t even vape, they Juuled Like a nice but expensive USB drive high school and even middle school students can easily carry these devices around discreetly. Unlike the bulkier Box mods that are the favorite of vaping Enthusiast and former smokers and are much less conspicious in the pack of traditional cigarettes who if you'd go and smoke one behind the bleachers, where the scent could linger throughout the day even under the scent of strong perfume and cologne.

Now you can go online and find so many viral videos of students charging and hitting their Juuls during class under the nose of their teachers, friends tricking each other with actual USB drives instead of vapes at parties, and the appeal of thousands of different flavors and pods and devices shows a culture around Juuling that has quickly drawn the attention of school administrators, parents, and doctors across the country. By 2019, 37% of high school students self-reported vaping that year, with more likely not self-reporting. Vaping was officially an epidemic, and the worst was yet to come with a wave of EVALI, or e-cigarettes and vaping use related lung injury that mysteriously sickened thousands across the country from additives and black market THC pods specifically.

And while studies show e-cigarettes can helps combustible cigarette smokers quit those people who are introduced to e-cigarettes or vaping without an existing cigarette habit are significantly more likely to switch to cigarettes later on this risk seems to increase the younger a person is along with their overall risk of developing nicotine addiction particularly for those under the age of 25 nicotine itself is a highly addictive substance for Youth and adults and even a cigarette a day habit can be devastating.

Term, that's why when some of these doctors are hearing high school students or sucking down a full pot of day. The equivalent to about 20 cigarettes is alarming even if it is considered less harmful on their lungs than traditional cigarettes. That amount of nicotine is extremely hard to quit.

Even harder if you don't necessarily realize you’re ingesting that much, Juul pods in particular are both higher in nicotine content and provide a more rapid absorption than other products, up to 2.7 times that of combustible cigarettes and even moreso than other vaping products like box mods that provide precise control over nicotine content and delivery. If you’re a high school student unable to buy your pods yourself and are relying on an older friend, or even parent or stranger, you don’t have that same control or awareness of what exactly you’re getting. And from what the FDA has been able to find it seems that Jewel did that on purpose or at the very least they knew about this and didn't do anything about it. Juul has been hit with and is currently dealing with numerous lawsuits alleging. They purposely advertise their products to minors and overstated the supposed health benefits to their products to youth in particular. The even went so far is doing sponsored presentations in high schools about the benefits of their productYes, you heard that right. The benefits, to high school students. The FDA has been scrutinizing them for a long time and continues to raise alarms about the company’s practices, which only escalated when Big Tobacco companies began investing in them. All of a sudden in the mid 2010’s, colorful advertisements began to appear online, and social media influencers started popping up with Juul sponsored posts, bringing the age-old big Tobacco techniques of sex appeal, relaxation, social status, and even selling vaping as a health and wellness ritual into the modern era.

This isn’t new, cigarette marketing throughout the 20th century was abundant and varied, targeting everyone from traditionalist old businessmen to making cigarettes as a symbol of a liberated feminist woman. Cigarettes were even marketed as a health necessity by doctors from the 1930’s to 50’s, despite the first studies linking them to cancer coming out in the 1920’s thanks to chemist Angel Honorio Roffo’s research on tar exposure inducing cancers. Tobacco companies became aware of this initially in the 1950’s and has spent millions upon millions of dollars since in attempts to cover up and outright deflect the science. Some of the government officials they lobbied still hold office today, many of them having argued on behalf of the companies that there was, quote, “Absolutely no definitive evidence that smoking cigarettes can cause cancer.” In resistance to investigations and lawsuits brought forth against those companies. But that topic is a whole other episode in and of itself.

Today, many of those same companies have either invested in Juul or similar brands, or have begun to create their own electronic tobacco products in an effort to get in on this new potential lifetime market. Combustible cigarettes still make up the majority of their business, but the audience has grown enough for them to take notice of the potential cash cow before them. The focus is not on making these devices safer or the delivery less harmful, but on enhancing and amplifying the effects even moreso since that is where the demand is going, instead of more controlled nicotine levels that are recommended most for actual smoking cessation. Even a pod a week can be an expensive habit that quickly grows, as many former cigarette smokers can tell you, and those companies want to ensure that money is going to keep going into their pockets.

I want to be really clear, we currently don’t have any data on the long term health risks of vaping, both nicotine and other substances or even just flavored pods. Early data is not good but in comparison to the tar from combustible cigarettes, vaping *is so far* less deadly, but we don’t have the data about how the other substances in vape “juice” interact with the human body long term when heated and inhaled at the temperatures that they are. While even with pods that claim they don’t contain nicotine, describing the aerosolized liquids as water vapor is extremely inaccurate, and as the EVALI cases shown, potentially deadly. While many of the ingredients on the legal market are FDA approved, looking closer many of those substances are only approved for ingestion at regular temperatures. Rapid heating of these for the purposes of inhalation has not been approved, and the early data of these additives is where the most concern lies. It was this heating reaction with Vitamin E acetate that caused the mysterious wave of vaping related illnesses that went around the country in 2019 and hospitalized thousands of young people across the country.

This was eventually traced to black market THC pods that didn’t contain nicotine, but it was the additives of Vitamin E acetate that when heated and inhaled, could cause potentially permanent damage to the body’s pulmonary system. While for adults who legally obtain their products this isn’t as much of a concern, It’s a whole other conversation when we are talking about underage users who solely rely on black market or middle-man transactions to obtain their drugs. This includes the so-called flavoring only juices, where you still need an ID to purchase because they’re still technically tobacco products. While again, vaping doesn’t result in the tar buildup that cigarettes do, the additives to the liquids are where doctors and researchers are most concerned about health risks. Nicotine itself is addicting, but the aerosolizing of the additives and flavorings can result in heavy metals and harmful chemicals like diacetyl into the lungs in similar ways to traditional cigarettes. E-cigarettes haven’t been around long enough for the research on their safety and efficacy to catch up to their marketing, and while heating tobacco is healthier than combusting it, that doesn’t make it *healthy*. It’s one thing to be conscious of the risks when you’re consuming a substance and to choose to use it regardless, it’s a whole other to have a generation convinced they’re inhaling water vapor or “just flavorings” when their pods may actually contain high levels of nicotine without their knowledge if they’re not purchasing their pods themselves.

The concern here isn’t just the unknown long term health effects from vaping, but the blatant misinformation that was disseminated through social media and word of mouth before potential health risk warnings reached this new generation of smokeless nicotine users. It’s one thing to use a substance with full knowledge of its risks, but when you have kids swearing up and down they’d never smoke a disgusting dirty cigarette while ingesting the equivalent of a full pack in a day and saying it’s just flavor or just water vapor, that raises the alarm for a lot of professionals and parents. Just because something is less harmful than cigarettes, that doesn’t make it *good for you,* and unfortunately it seems like that message is only just getting through to many vapers, young and older.

And again, other countries haven’t had this problem with e-cigarettes and underage use. In both the UK and China they’ve successfully been used in smoking cessation programs, have reduced air pollution and second-hand smoke exposure (especially in crowded urban areas) and millions of users appear to have permanently made the switch across the globe from traditional combustible cigarettes to e-cigarettes. The major difference is the marketing. You won’t see young and attractive social media influencers showing their latest rigs, sponsored posts with lavish lifestyles on full display, they’re fully marketed as smoking cessation products and direct alternatives to combustible cigarettes. In the United States, smoking, vaping, and Juuling almost appear to be three separate habits, thanks to the strength of the brand and the marketing behind it. In 2018 63% of Juul users between the ages of 15-24 didn’t realize that the pods contained nicotine, flavor-only pods were not available at the time. Now, numerous states including Michigan have passed bans on these flavored juices, quite accurately claiming that they were primarily marketed towards minors. Unfortunately, that has left a massive black market for homemade flavor pods, with numerous “recipes” online for DIY liquids with flavoring, many of which contain oils and additives that are not safe for aerosolized inhalation, including coconut oil of all things. Inhaling these heated products can leave behind heavy metals and microparticles behind in the lungs in the same way that traditional cigarettes do. While THC products are a whole other podcast topic, homemade and black market THC pods are still dangerous and were the main source of EVALI injuries from Vitamin E acetate additives. Even less research is available about the health effects of THC due to legal restrictions around studying it, and there’s absolutely no regulation or oversight in the market on the ingredients within even the state cannabis market at the moment. With even licensed dispensaries and producers found selling tainted vaporizer pods in the last two years across the United States.

For former cigarette smokers, e-cigarettes can be life changing, even leading to complete cessation of nicotine consumption altogether. Across the world it’s hard to argue that its invention and distribution hasn’t saved any lives or that they are equally as harmful as traditional cigarettes. But the part of the headline that often gets cut off when scrolling is that less harmful still doesn’t equal healthy, and for former cigarette smokers who are well aware of how deadly cigarettes can be (and how difficult to quit it is), the lessened risk is well worth it. The concern is how the consumers who would never touch a traditional cigarette believe that there are no health consequences to vaping, when we just don’t know how the depositing of heavy metals and aerosolized particles via e-cigarettes will affect their bodies long term.

So where does this leave us? Well…we don’t know. There has been a reduction in vaping it appears among high school students at least, down to 19.6% of high school students reporting e-cigarette use in 2020. Significantly down from 2019, potentially due to a multitude of factors (including the ongoing global pandemic interrupting purchasing abilities for underage users), there is some signs that health messaging and cracking down on marketing tactics is working, but the questions of long-term health effects and the risks of heating the substances in the vape juice are still to be determined, potentially after the damage has been done. But if you’re not a current cigarette smoker, and you’re not planning on getting your products from a licensed retailer, you may want to reconsider picking up the habit.

The good news is, there is more and more studies that are finding e-cigarettes can be part of successful smoking cessation when used under the supervision and guidance of a medical professional. This is in-line with the current United Kingdom model where addiction counselors work with patients to reduce or completely end their use of traditional cigarettes through the controlled usage of vape products, but this does require the patients to have access to both the medical professionals and the mental health counseling that can be extremely difficult to access already in the United States. The studies also once again are comparing vaping to cigarette smoking, not those who started out vaping as much of these younger consumers are, leaving many questions around e-cigarette cessation still unanswered.

As we continue to wait on more studies and more patterns to arise in the coming years as to how successful these flavor bans and other methods of discouragement are in terms of reducing the amount of underage users, if you’re making the choice to use e-cigarettes, do some digging into the products and dosages you’re spending your money on. Until next time, I’ve been Alex Baker asking you to be safe, be smart, and be responsible.