Vaping and Culture:
Vaping e-Journal Series, Part 1

Vaping and Culture

When it comes to drugs like alcohol or tobacco, culture plays a fundamental role. Advertising works, and especially with teens. For instance, while most kids don't smoke, the U.S. federal government's *National Household Survey on Drug Abuse* found that among the few who do, 87% use the three most heavily advertised brands: Philip Morris' Marlboro, Lorillard's Newport, and R.J. Reynold's Camel. By contrast, less than half of adult smokers prefer these brands.

Despite these advertisers' best efforts, for decades, there has actually been a steady decline in teen smoking. According to*Monitoring the Future*, U.S. teen tobacco use is at historic lows. Information about the health consequences of tobacco products is now well-known and well-established. With this information, teens are making healthier choices!

However, a relatively new product has sought to fill the space left by "traditional" tobacco use - electronic cigarettes. Also known in their various iterations as e-cigs, vaporizors, vapes, vape pens, ENDS (Electronic Nicotine Delivery Systems), and a variety of brand names, the e-cigarette market expanded by 40% and brought in $1.6 billion in 2017.

In addition to traditional television and print, vapes are heavily advertised on social media like YouTube and Instagram. Exposure to such advertising nearly doubles the likelihood of a teen taking up some form of nicotine use.

Despite all the ads, it is not uncommon for many of us to misunderstand what vapes are. In this FCD e-journal, the first of four in our series about vaping prevention, we'll explore what these products are, how they are positioned in culture for our teens, and how you can talk to kids about them.

Vapes As a Consumer Product, Cultural Trend, and Drug Delivery System

According to the United States Food and Drug Administration, vapes are "ENDS," or Electronic Nicotine Delivery Systems. The name explains exactly what these products are intended to do: electronically deliver nicotine into the body. ENDS are comprised of liquid chemicals, including nicotine in solution, and a heating mechanism within the device itself.

Differences in appearance among the various brands of ENDS are mainly aesthetic. Vapes come in many forms and styles that suit an individual's preferences. Many take on a techy look that mimics other personal electronics, like a USB drive, while some mirror the look of traditional cigarettes. Often, vapes are discreetly designed. Vape "mods" or modifications may change both a vape's look and functionality, allowing the owner to use the device to deliver other substances or to perform tricks with the device's aerosol clouds.

When used, ENDS convert their liquid chemical components - commonly called e-liquid or e-juice - into an aerosol through their heating mechanism. This aerosol is, in fact, made up of tiny droplets of chemicals. Vape chemicals are both inhaled into the mouth, throat, and lungs of the user and released into the environment around the user, coming to rest on nearby surfaces. These chemicals enter the bloodstream via the lungs. The effect on the brain is felt in seconds. Depending on the concentration of nicotine or other chemicals in the e-liquid, the user may feel lightheaded, dizzy, or experience a nicotine "rush," setting off cravings for more nicotine.

What chemicals are in e-liquids?

In the United States, there is currently no federal regulation of vapes as drug delivery devices. Manufacturers of e-cigarettes and e-liquids are not required to reveal to consumers what is in their products. As a result, youth and adults who vape most likely cannot fully understand what they are putting into their bodies and their environments when they vape.

Currently, there is no longitudinal research on either the long- or short-term risks of vape use. Independent studies by several health organizations find that even products marketed as nicotine-free often contain nicotine in varying quantities. Chemicals like propylene glycol also exist in vapes to produce their vapor clouds. These studies have found a variety of other compounds, as well, including known carcinogenic chemicals and metals, in e-cigarette aerosol. A full-list of these chemicals is available through the Stanford Tobacco Prevention Toolkit.

On Trend: How Many Students Are Using ENDS?

Globally, vaping is a trending - but not a majority - behavior among teens. In 2017, the *FCD Student Attitudes and Behavior Survey* showed us that around the world, less than 10% of 8th graders, 25% of 10th graders, and less than 40% of 12th graders in FCD schools vaped in the past 12 months.

In the United States, the annual *Monitoring the Future* study found that in 2017, less than 15% of 8th graders, less than 25% of 10th graders, and less than 30% of 12th graders vaped in the past 12 months. MTF data also shows that, among the minority of students who do use these drug delivery devices, 18% say they have vaped nicotine, 8% say marijuana, and 24% say "just flavoring."

Even with headlines bemoaning a surge of teen vaping, the truth is that most don't vape at all, and that's important news to share. Continuing to promote the healthy and normal non-use of substances by teens will benefit them in the future and prevent negative health consequences, including other drug use and addiction.

Common Cultural Misconceptions About ENDS

Here are some common cultural misperceptions about vapes:

These products help tobacco users quit smoking.

The World Health Organization has not approved of any vape or e-cig as an effective smoking cessation product. What's more, initial research indicates that tobacco users who attempt to quit using e-cigarettes have a high chance of either returning to traditional tobacco products and using them concurrently with e-cigarettes, or of continuing to use e-cigarettes in the long-term. Either way, nicotine addiction is perpetuated. Though electronic cigarettes were originally created to be smoking cessation aids, real-life testing has yet to live up to these expectations.

These products are safe or harmless.

We do not know the long-term health consequences of inhaling the chemicals found in e-liquids. For example, propylene glycol is a chemical that is "generally considered as safe" by the FDA when used in small amounts as a food or make-up preservative. Another base chemical used in e-liquids is vegetable glycerin. Vegetable glycerin is a colorless, odorless liquid produced from a variety of plant oils. It is used in products like toothpaste and shampoos to keep them moist. However, the health consequences of repeatedly, directly inhaling heated, combusted propylene glycol or vegetable glycerin are unknown.

A chemical of particular concern that may be used in e-liquids is diacetyl. Diacetyl is used to flavor microwave popcorn. Diacetyl is generally considered safe to eat in small amounts. However, workers in popcorn factories - regularly exposed to inhalation of this chemical - have developed a chronic lung infection, called bronchiolitis obliterans, and nicknamed "popcorn lung."

We cannot consider the inhalation of any chemical in a vape "safe." Inhalation of these chemicals may prove particularly harmful to health. Our prevention role as adults in the lives of teens is to educate students that all use equals risk. There is no such thing as a "safe" drug, including those delivered through vaping. Introducing chemicals into the body, particularly the developing teenage body, incurs risk. The healthiest and most common option is non-use.

E-cigarettes are a healthy alternative to tobacco products.

Perhaps the most significant cultural misconception about ENDS is the false dilemma that teens must choose between the use of e-cigarettes or the use of other tobacco products. ENDS proponents claim vapes are "healthier" and therefore "better" than traditional tobacco products. Such claims create the illusion that are teens have only two options: to vape or to smoke. The healthy reality is that most teens are already choosing a third option - not to use at all!

The non-use of nicotine is the most popular options among teens. For every middle school student who vapes, nine do not. For every three high school seniors vaping, seven are not. Even fewer students use any other form of traditional tobacco.

The vast majority of teens are acting in the best interest of their health. The teenage brain and body develops optimally without the presence of mind-altering chemicals. When it comes to substances like e-cigarettes, marijuana, or alcohol, non-use or delayed use is the safest, most common choice.

What Adults Can Do

Teens need to hear adults applaud their healthy choices in clear, plain language. When teens know you see and value their healthy decisions, they are more likely to continue making those decisions as they grow. Likewise, adults who care must use clear language about the risks of exposing the developing teen body to substances.

Do not fall into the false dilemma trap. All use equals risk, and delayed use is safest for teens. When we get into debates about which substance is "worse," we step out of the health perspective and into a moralistic approach to substance abuse prevention that fails every time.

When we as adults talk about one drug being "better" than another, teens often interpret that you mean that adolescent use of the "better" drug is allowable, normal, and safe. Teens are looking for our guidance in making decisions about how to stay healthy. We need to continue to maintain a clear position about vape products as drug delivery devices that are risky for youth.

Understanding what vapes are and how to speak about them with teens can bolster your effectiveness as a prevention agent in your community. For more information about vapes, the following resources can keep you well informed:

- http://www.nida.nih.gov (National Institute on Drug Abuse)
- https://www.tobaccofreekids.org/ (Campaign for Tobacco-Free Kids)
- https://med.stanford.edu/tobaccopreventiontoolkit.html (Stanford Tobacco Prevention Toolkit)
- http://stillblowingsmoke.org/ (Tobacco-Free California)
- https://drugfree.org/ (Partnership for Drug-Free Kids)

As adults who care for kids with a passion to promote their health, we encourage you to continue to learn about vapes, to keep the conversation going in your classrooms and homes, and to advocate that your fellow adult caretakers of student health do the same!

About the Author

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