

E-Cigarettes

What ARE these things?!

Also called Electronic Nicotine Delivery Systems (ENDS) or personal vaporizers (PV), e-cigarettes are a new way for smokers to get their nicotine- quickly. These products are marketed heavily towards young adults, particularly through use of social media and at mall kiosks. These products are touted as a “safer” alternative to smoking, and a way to either quit smoking cigarettes, or to smoke in places cigarette smoking is not allowed. However, these products are not yet regulated by the US Food and Drug Administration (FDA), and no rigorous scientific studies have shown that they are safe for use.

Rechargeable vs. Disposable

The device is battery-powered; some brands can be recharged via a USB port, others are disposable. A battery-powered e-cigarette is pictured below (photo courtesy of Legacy). The middle piece is called a vaporizer (or in some brands, an atomizer), which is the piece that heats the liquid stored in the cartridge (where the flavored nicotine is stored). Disposable e-cigarettes do not require charging, or changing batteries or cartridges. As of September 2013, the disposables, sold one at a time, were \$7.99 in a pharmacy located within a major U.S. city. At the same store, a rechargeable ‘starter kit’ was \$34.99. Overall, disposable e-cigarettes last for roughly the same amount of time as two packs of traditional cigarettes, and rechargeable e-cigarettes last as long as a pack and a half. These estimates vary by brand and by the smoker’s usage patterns.

In both types of devices, nicotine vapor is exhaled from the end, mimicking the behavior of a regular cigarette. The flavor cartridge may contain up to 20mg of nicotine per cartridge¹.

Rechargeable e-cigarette



Disposable e-cigarette



Lack of E-cigarette Regulation

As of July 2013, the World Health Organization reported that there are no rigorous, scientific studies that have been conducted to determine if electronic cigarettes are a useful method for helping people

to stop smoking². Because the marketing and product requirements of e-cigarettes are not currently regulated, there are no standards for product manufacturing or safety. The amount of nicotine in a cartridge can vary widely between brands because of this lack of regulation. The chemical compounds in an e-cigarette can also vary between brands. Until rigorous research is done on these products, their safety is unknown.

Despite these items not being regulated in a comprehensive manner, many people still use them. Common reasons for use include: the perception that they are healthier/less toxic than traditional cigarettes, aid in tobacco craving/withdrawal symptoms, smoking cessation facilitator, and relapse avoidance³.

Dangerous Appeal to Youth

E-cigarette cartridges are available in a variety of youth-friendly flavors. A quick Google search shows availability of flavors like peach schnapps, java jolt, piña colada, peppermint, and chocolate. These flavors have been banned in traditional cigarettes, but exist in e-cigarettes, and it's these flavors that have been shown to entice children⁴.

Use of e-cigarettes by youth is on the rise: Results from the 2012 National Youth Tobacco Survey tells us that ever use of e-cigarettes for students in grades 6-12 was 6.8%⁵. Current (last 30 days) e-cigarette use was 2.1% for the same age group and dual use of e-cigarettes and conventional cigarettes was 1.6%⁶.

Public Health Concerns

E-cigarettes aid tobacco companies in circumventing smoke-free laws. While some smoke-free laws do not mention whether e-cigarettes are specifically prohibited there is an effort to add e-cigarettes to these laws and policies. Use of e-cigarettes is restricted on airplanes, as the US Department of Transportation has deemed that federal regulations prohibiting smoking on aircrafts applies to e-cigarettes as well⁷. As of January 2014, a few states (ND, NJ, UT) and cities (Chicago, New York City) have enacted legislation to specifically prohibit e-cigarette use in 100% smoke-free venues⁸. Several others (AR, CO, DE, KS, MD, NH, OK, OR, SD) have passed laws regulating e-cigarette use in various venues such as correctional facilities, school properties, and commuter trains⁹. However, e-cigarettes continue to be marketed as a way to smoke in places you can't smoke. The desire to get around smoke-free laws has led to the creation of vaping lounges- similar to cigar bars and hookah lounges, these vaping lounges allow e-cigarette users to use their devices (or 'vape') in a confined, social setting.

Access to e-cigarettes by minors is also a concern: only a few states have passed laws prohibiting sales of these devices to minors (As of January 2014: AL*, AR, CA, CO, HI, ID, IL, IN, KS, MD, MN, MS, NH, NJ*, NY, NC, SC, TN, UT*, VT, WA, WI, WY)¹⁰.

Sales of e-cigarettes have grown rapidly in the United States, and after doubling every year since 2008, sales in 2013 are accelerating and projected to reach \$1.7 billion¹¹. Marketing of these items is also unregulated and currently booming through print, TV, radio, and other forms of advertising. During the 2013 Super Bowl broadcast, NJOY e-cigarettes purchased a 30-second television advertisement slot

which reached at least 10 million viewers in certain markets and reportedly translated into a dramatic 30-40% increase in sales¹².

These devices can also re-normalize smoking behaviors and cigarette use¹³. Children mimic what they see, and despite smoking rates decreasing over the last several years, rates of adolescent use may rise due to the uptick in adult e-cigarette use. There is also concern that e-cigarettes may cause a relapse for former smokers¹⁴.

Also worrisome is that e-cigarette manufacturers are offering incentives to purchase their product (blu e-cigarettes has a rewards program that gives discounts and free products from their rewards catalogue). Some manufacturers also offer recycling programs, where participants can earn free e-cigarettes by mailing back old, used products.

Tobacco companies that make conventional cigarettes have realized the potential of e-cigarettes, and have been releasing their own lines of e-cigarettes. Lorillard was the first, having bought the blu e-cigarette company in 2012, and the product is sold nationwide. RJ Reynolds released its e-cigarette Vuse in July 2013, and it's currently only sold in the Denver, CO area. Altria released MarkTen e-cigarettes in August 2013, and they are currently only sold in convenience stores across Indiana. British American Tobacco currently distributes its Vype e-cigarette only within the United Kingdom, and the product can easily be ordered online. Adoption of e-cigarettes by conventional cigarette makers seems to have inspired other manufacturers as well- electronic hookah pens¹⁵, e-Swishers¹⁶ (a type of cigar), and other products are now available in electronic form, but none as widely available as the e-cigarette.

These concerns have been voiced repeatedly by the health community- In September 2013, health organizations banded together to send President Obama a letter requesting that he urge the FDA to take action on regulation of e-cigarettes¹⁷. Less than a week later, forty state Attorneys General sent a joint letter to FDA Commissioner Margaret Hamburg requesting regulations on e-cigarettes by the end of October 2013¹⁸.

Pediatric Concerns

Due to a lack of regulation in e-cigarette marketing, children, who are impressionable and model the behavior of adults, are at risk from viewing marketing aimed at adults. This is also a concern due to the increased number of e-cigarette users- these devices mimic conventional cigarette use and help to normalize smoking behaviors. Because e-cigarettes are offered in many child-friendly flavors, there is also a concern surrounding toxicity- the nicotine cartridges and refills pose a poison risk to children. Not all states have laws regulating purchase age for e-cigarettes, which means access to these devices is possible for minors.

Pediatricians should be aware of the dangers and concerns, and have informed conversations with patients and families about e-cigarettes.

*law applies to those under the age of 19

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