



# E-Cigarettes: Harmful or Helpful?

## Debunking the myths and answering your questions

While recently flipping through a magazine, watching television, or hanging out with your friends, you may have seen advertisements or the use of electronic cigarettes (also known as e-cigarettes). You may notice that some of these products look like traditional cigarettes and are marketed similarly, and you may hear terms like vaping, e-juice, and hot sticks. But these products are not traditional tobacco products – they come in a variety of forms like pens,



e-hookah, e-cigars, and in a variety of flavors like chocolate chip or coffee. But unlike traditional tobacco products, electronic cigarettes also known as electronic nicotine delivery systems (ENDS), are not well understood. You may even think they are safe, but the jury is still out. While we know about some short-term risks associated with these, we simply have no evidence about the long-term risks OR benefits of ENDS.

On 8 August 2016, the Food and Drug Administration’s (FDA) “deeming rule” took effect which brings all tobacco products, including ENDS, under their regulation.<sup>1</sup> Prior to 8 August, the FDA only regulated cigarettes, cigarette tobacco, roll-your-own tobacco, pipe tobacco, and traditional smokeless tobacco.<sup>1</sup> The recent rule for products being newly regulated such as ENDS, hookah, and cigars imposes minimum age of purchase as well as the scientific review of products and claims, limitation on where these products can be sold, as well as proof of ingredients and the health impacts.<sup>1</sup> The rule applies to all new regulated products that were on the U.S. market as of 15 Feb 2007; newly regulated product types on the market prior to that will be grandfathered in.<sup>1</sup> Below you will find information on the most frequently asked questions on e-cigarettes/ENDS. The Navy and Marine Corps Public Health Center (NMCPHC) hopes you will use this information to make an informed decision about the use of ENDS of any kind.

## **MYTH: The products and boxes don’t contain any warnings like cigarettes or other tobacco products. They must be safe.**

Until recently, the FDA did not regulate ENDS. This means tobacco companies and manufacturers were under no obligation to disclose a list of ingredients, amounts of these



ingredients, or notify the FDA when changes to the products occurred. Under the 2016 rule, packages and advertisements for newly regulated products including e-cigarettes, must have the following warning statement: “WARNING: This product contains nicotine. Nicotine is an addictive chemical.”<sup>2</sup> If the product does not contain nicotine then the product must have the following statement: “This product is made from tobacco.”<sup>2</sup> Initial studies prior to FDA regulation have shown that some nicotine-free e-cigarettes contain nicotine<sup>3</sup>, that there is inconsistent delivery of nicotine among devices and cartridges<sup>3</sup>, and chemicals such as nitrosamine (a cancer-causing agent found in tobacco)<sup>4</sup>, propylene glycol (a component of anti-freeze which is toxic to humans)<sup>4</sup>, and diacetyl (often used in food products and the cause of “popcorn lung”)<sup>5,6</sup> are present in some flavorings and aerosols.

### **MYTH: Electronic tobacco products are harmless and are safe to use.**

There is evidence on both sides that electronic products such as e-cigarettes, e-pipes, or e-cigars are a safe alternative to smoking. The most devastating health effects from cigarette smoking such as cancer are caused by the inhalation of tar and chemicals from the burning of tobacco.<sup>7</sup> Electronic products do not burn tobacco leaves and thus may have fewer harmful ingredients. Initial research has shown harmful substances in e-cigarette vapor that cause cancer as well as metal nanoparticles from using the product.<sup>7</sup>

The negative effects that traditional cigarettes can have on your body are well studied and documented, but the impact of ENDS on your overall health and long-term use is not yet fully understood. A recent study revealed that the short-term effect of e-cigarettes (both nicotine and non-nicotine varieties) on lung function is the same as traditional cigarettes.<sup>8</sup> Just like smoking traditional products like cigarettes or cigars, these products equally reduced the lung’s ability to exhale nitric oxide, which can lead to respiratory illnesses such as asthma and bronchitis.<sup>8</sup> A recent study in the *Tobacco Control Journal* concluded that product type, battery output voltage, and liquid flavor affected the toxicity of the aerosol and some flavors were shown be more toxic than others. Still another study demonstrated that combining flavor mixtures may also cause a wide range of health effects depending on the combination.<sup>9</sup> While further research is greatly needed, initial information concludes that e-cigarettes may cause immediate harm and negatively impact your ability to perform at your peak in the short-term.

### **MYTH: E-cigarettes can be used to quit tobacco.**

E-cigarettes are not approved by the FDA as a tobacco cessation device. Effectiveness and safety of ENDS have not been fully established and thus, should not be recommended as a tobacco cessation aid. Experts are also concerned that people who use e-cigarettes will get addicted to them. In fact, research shows that the use of e-cigarettes can lead to the use of



traditional tobacco products; the use of traditional tobacco products has many documented health effects and can cause early death.<sup>10</sup> Additionally, because ENDS contain nicotine, which is what contributes to the addictive properties of tobacco use, continuing to use these products may further sustain the addiction rather than aid in quitting.<sup>7</sup> There are many FDA approved medications to help you quit tobacco such as nicotine replacement therapy (e.g. patch, gum, lozenge), Zyban/Bupropion/Wellbutrin, or Chantix/varenicline. Medications (over-the-counter and prescription) approved by the FDA have been tested for effectiveness and safety. There are also many proven counseling approaches that can be used in conjunction with medications to help you be even more successful with your quit attempt. Please contact your medical provider, dental professional, or your Medical Treatment Facility (MTF) Health Promotion Program for help quitting all forms of tobacco.

**MYTH: E-cigarettes can be used anywhere, including Navy workspaces.**

The current [SECNAVINST 5100.13E](#) (Navy and Marine Corps Tobacco Policy) states that all tobacco use is prohibited inside Department of the Navy (DON) facilities, including within Navy Medical and Dental Treatment facilities. All types of tobacco product use (smoking and smokeless) may only be used in the designated tobacco use area of your command or location. The bottom line is that e-cigarettes cannot be used inside of any DON buildings. In the civilian world, many cities and states have indoor air laws and smoking bans that prohibit e-product use, and some countries have even placed limitations on the importation of these products or banned them altogether. Similarly, federal regulations have been put into place by the U.S. Department of Transportation and Federal Aviation Administration on the use and carrying/storing of these devices.

**MYTH: If I make the choice to use e-cigarettes, I am only harming myself.**

Not only are you harming your body by inhaling the potentially harmful liquids found inside e-cigarettes, but having them available increases the danger of accidents to those around you. The Centers for Disease Control and Prevention (CDC) has reported that the number of calls to poison centers regarding e-cigarette liquids rose from one per month in September 2010 to 215 per month in February 2014.<sup>11</sup> Over half of the calls involved young children under five years of age, and about 42 percent of the calls involved people ages 20 and older.<sup>11</sup> In addition, there have been numerous news stories about e-products starting fires while plugged into the wall or charger or exploding, even when stored or in a pocket, causing injury. In August 2016, the Naval Safety Center released a memo stating that electronic cigarettes, vaporizers, vape pens, and similar equipment post a significant and unacceptable risk to Navy personnel, facilities, submarines, ships, vessels, and aircraft and that it is strongly recommended that these devices



should be prohibited from use, transport, or storage on Navy facilities, submarines, ships, vessels, and aircraft.<sup>12</sup> From October 2015-May 2016 there were 12 reports of mishaps with DON personnel, resulting in injuries or fires and it is extremely likely, according to the memo, that other incidents were not reported by Navy or Marine Corps personnel.<sup>12</sup> Of the reported incidents, eight of the 12 devices were being stored in the Sailor or Marine's clothing; shorting or discharge resulted in first and second degree burns. Four of the reported incidents occurred while the device was in use, some causing facial and dental injuries.<sup>12</sup> These 12 mishaps resulted in 77 days of lost work times and 157 days of light/restricted duty.<sup>12</sup>

### Where can I get more information on e-cigarettes?

- [NMCPHC Tobacco Free Living Campaign](#)
- [Smokefree.gov – What We Know About E-Cigarettes](#)
- [Be Tobacco Free.gov – Electronic Cigarettes](#)  
<http://betobaccofree.hhs.gov/about-tobacco/Electronic-Cigarettes/index.html>
- [Food and Drug Administration – Vaporizers, E-Cigarettes, and other Electronic Nicotine Delivery Systems \(ENDS\)](#)

### References

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- 9 Leigh NJ, Lawton RI, Hershberger PA, et al. Flavourings significantly affect inhalation toxicity of aerosol generated from electronic nicotine delivery systems (ENDS). *Tob Control.* 2016.  
<http://tobaccocontrol.bmj.com/content/early/2016/09/15/tobaccocontrol-2016-053205.full>



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10 Centers for Disease Control and Prevention. Key Findings: Intentions to smoke cigarettes among never-smoking U.S. middle and high school electronic cigarette users, National Youth Tobacco Survey, 2011-2013.

[http://www.cdc.gov/tobacco/basic\\_information/e-cigarettes/youth-intentions/index.htm](http://www.cdc.gov/tobacco/basic_information/e-cigarettes/youth-intentions/index.htm). Updated 22 September 2014.

11 Centers for Disease Control and Prevention. New CDC study finds dramatic increase in e-cigarette-related calls to poison centers. <http://www.cdc.gov/media/releases/2014/p0403-e-cigarette-poison.html>. Updated 3 April 2014 (archived).

12 Murray, CJ. Department of the Navy, Naval Safety Center. "Electronic Cigarette Prohibition Guidance." Norfolk, VA. 11 Aug 16.