

Commentary

An Update on Vaping Safety

By Jahan Marcu, PhD, Editor in Chief

Millions of people regularly vape cannabis products. My original 2015 article (page 26) was written as the vape pen market began to increase dramatically. At the time, the significant issues were hardware that was prone to overheating, cutting agents that released formaldehyde-releasing agents when heated, and inaccurate labels. The problems remain largely the same, with additives being the most likely cause of safety issues, rather than cannabis oil itself. It may not be propylene glycol on the hot seat this time, but rather additives flowing through cheap devices that can heat over 900°C. The legal and unregulated markets are flooded with inexpensive, disposable hardware, which can heat material well above the vaporizing threshold; in fact, many “vape pens” are not vaporizers—they burn the material.

Cannabis product safety has been a passion of mine, and for years I have written and spoken about the potential dangers of cannabis products, especially those produced outside of regulated markets. The purpose of this commentary is to provide context to the current public health crisis, as well as recent information that could be useful for health care professionals who may need to discuss vaping with their patients. What follows is a brief discussion on some of the origins of this issue; how many of the factors remain the same; what have we learned; and the potential opportunities to create vital public health data in front of researchers, regulators, and doctors.

Multistate Outbreak of Lung Injury

After years on the market and hundreds of

millions of vape pens sold without significant issues, suddenly in 2019, increases in hospital visits related to e-cigarette use dramatically increased over the summer (if filled with cannabis/hemp extracts, these devices often are referred to as vape pens).¹ Major media outlets began heavily reporting on the tragic and unnecessary deaths and illnesses in multiple states that are believed to be tied to inhalation of diluted cannabis extracts in e-cigarette devices. The US Centers for Disease Control and Prevention (CDC), state health departments, research institutes, and private companies in the cannabis industry have begun investigations or issued warnings.^{1,2}

What is clear today about cannabis and hemp, is that the issues surrounding the public health crisis and the regulated vs unregulated market dynamics are even more important to consider, given that regulated markets have track and trace requirements, and basic product testing services are usually required by state law. The lack of regulation provides opportunities for products to be developed without oversight for the quality, and safety of products. Products being distributed in unregulated markets, including cannabidiol products that can be purchased easily online, have a proven record of unreliability, according to data from the FDA and other research groups.^{1,2}

Practical Considerations

Health issues are associated with using low-quality cannabis and nicotine vape products due to the inclusion of pesticides, thinning agents, thickening agents, and other dangerous additives. Cannabis flowers that are vaporized are not associated with this epidemic. However, the dilution of cannabis extracts is challenging to do safely, and even cannabis sold in legal markets can have additives.

Vaping Statistics and CDC Recommendations

- As of October 15, 2019, 1,479 lung injuries associated with the use of e-cigarette, or vaping, products have been reported from 49 states (all except Alaska), the District of Columbia, and 1 US territory
- Thirty-three deaths from these injuries have been confirmed in 24 states
- The FDA and the CDC have not identified the cause or causes of the lung injuries in these cases
- Delta-9-tetrahydrocannabinol (THC) is present in most of the samples tested by the FDA to date, and most patients report a history of using THC-containing products

The CDC recommends that patients should not:

- Use e-cigarette, or vaping, products that contain THC
- Buy any e-cigarette, or vaping products, particularly those containing THC, off the street
- Modify or add any substances to e-cigarette, or vaping, products that are not intended by the manufacturer, including products purchased through retailers

Source: US Centers for Disease Control and Prevention.¹

Don't buy cheap. Not all vapes are created equally. Many portable, e-cigarette-type hardware will burn the material. If it is an inexpensive device, it is probably not a vaporizer. For example, herbal cannabis vaporizers retail for as much several hundred dollars. Building quality hardware with safe materials is difficult,

and costly. If they're giving it away for free, make sure you trust the source. Look for devices that state their vaporization temperature—not just the wattage and resistance.

Don't ban all vaporizers. Well-intentioned leaders may be inadvertently be making the situation worse by placing bans on all vaporizers, as this can drive consumer demand to illicit markets.

Do buy from regulated retailers. When purchasing cannabis vape cartridges (or any cannabis product), it is essential to purchase products made by licensed manufacturers and that are tested and comply with relevant state regulations. With the rise of counterfeit vapes being sold under the name of legal and trusted brands, it is equally important to purchase from a licensed dispensary.

Do read the label. It is important to know what ingredients are in those products. Most states require ingredients to be listed on the packaging of cannabis products, with some requiring manufacturers and dispensaries to share laboratory results with consumers upon request. Buy from a different dispensary if ingredients are not listed.

References

1. US Centers for Disease Control and Prevention. Outbreak of Lung Injury Associated With E-Cigarette Use, or Vaping. October 17, 2019. Available at: https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html
2. US Food and Drug Administration. Vaping illness update: FDA warns public to stop using tetrahydrocannabinol (THC)-containing vaping products and any vaping products obtained off the street. Available at: <https://www.fda.gov/consumers/consumer-updates/vaping-illness-update-fda-warns-public-stop-using-tetrahydrocannabinol-thc-containing-vaping>

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