

Nicotine Levels in Electronic Cigarettes

Journal Article ¹⁾

Introduction:

The electronic cigarette (EC) is a plastic device that imitates conventional cigarettes and was developed to deliver nicotine in a toxin-free vapor. Nicotine in a solution is heated and vaporized when a person puffs through the device and is inhaled as a vapor into the mouth. The EC is a new product on the market and little is known about its safety and nicotine delivery efficacy. The aim of the study was to analyze nicotine levels in vapor generated from various EC brands and models. The study was designed to assess efficacy and consistency of various ECs in converting nicotine to vapor and to analyze dynamics of nicotine vaporization.

Methods:

Sixteen ECs were selected based on their popularity in the Polish, U.K. and U.S. markets. Vapors were generated using an automatic smoking machine modified to simulate puffing conditions of real EC users. Nicotine was absorbed in a set of washing bottles with methanol and analyzed with gas chromatography.

Results:

The total level of nicotine in vapor generated by 20 series of 15 puffs varied from 0.5 to 15.4 mg. Most of the analyzed ECs effectively delivered nicotine during the first 150–180 puffs. On an average, 50%–60% of nicotine from a cartridge was vaporized.

Conclusions:

ECs generate vapor that contains nicotine, but EC brands and models differ in their efficacy and consistency of nicotine vaporization. In ECs, which vaporize nicotine effectively, the amount inhaled from 15 puffs is lower compared with smoking a conventional cigarette.

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[Category-Efficacy](#), [E-Cigarette](#), [Folder-E-Cigs](#), [Leans-Positive](#), [Nicotine](#), [RESEARCH](#)

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Goniewicz , et al. (2013), Nicotine Levels in Electronic Cigarettes,
<http://ntr.oxfordjournals.org/content/15/1/158> accessed: 2013-11-09

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