



# No controversy: e-cigarettes are not a treatment for tobacco/nicotine cessation

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Electronic nicotine delivery systems (ENDS) or electronic cigarettes (ECs) were developed by Hon Lik, a Chinese pharmacist, and patented in 2003.<sup>(1)</sup> In 2014, a review article in the *Jornal Brasileiro de Pneumologia*<sup>(1)</sup> stated that ENDS were “controversial” and that few studies had evaluated “the effects of ECs on smoking reduction and cessation over a 6-to 24-month period.”

On August 19th, 2015, the UK Government issued a press release with the headline “E-cigarettes around 95% less harmful than tobacco estimates landmark review,” publicizing a new report<sup>(2)</sup> commissioned by Public Health England (PHE) and led by Professor Ann McNeill and Professor Peter Hajek, worshipping the use of ECs as a harm reduction strategy and minimizing their associated risks. The claim of safety attracted huge media interest worldwide.

PHE reported that ENDS were “95% less harmful than tobacco” based on a single publication that was biased in several ways.<sup>(3)</sup> In July of 2013, PHE gave a two-day workshop in London that included an international expert panel<sup>(3)</sup> in order to review the context of perceived types of harm from nicotine-containing products, the range of the products (obviously including ENDS), and the criteria of such harms. During the workshop, the products were scored according to the types of harm, and weights were applied to the results. There was no formal criterion for the recruitment of the experts (some of whom were not even from the health field), as well as a lack of hard evidence of the type of harm caused by most of the products in the majority of the criteria and plenty of conflicts of interest of several of the participants, as highlighted in publications by the British Medical Journal in September<sup>(4)</sup> and November<sup>(5)</sup> of 2015, but not fully disclosed in the study.<sup>(3)</sup> The study was basically a biased opinion of a group “in the pay of manufacturers”, as stated in the title of an article published by the Daily Mail newspaper.<sup>(6)</sup>

In 2018, PHE reiterated its claim that vaping “is at least 95% safer than smoking” and reinforced its use for “smoking cessation,” even recommending it for pregnant women.<sup>(7)</sup> In the same year, The Royal College of Psychiatrists<sup>(8)</sup> published a position statement endorsing the use of varenicline and ECs to reduce the prevalence of smoking among people with mental health problems.

The ENDS industry (the so-called “Big Vape”) is owned by major tobacco companies (known as “Big Tobacco”). In 2018 alone in the USA, the top 25 EC manufacturers brought in more than \$2.5 billion in sales: 96% of these sales were from brands owned in whole or part by the Big Tobacco.<sup>(9)</sup> In 2018, the EC market revenue in the United Kingdom was \$2,498.07 million, according to the webpage [statista.com](http://statista.com).<sup>(10)</sup>

Tobacco harm reduction rationale involves providing tobacco users who are “unwilling or unable to quit” less harmful nicotine-containing products for continued use.<sup>(11)</sup> The skepticism toward harm reduction is based on the history of low-yield tar/nicotine cigarettes that are promoted and marketed as having lower health risks.<sup>(11)</sup> Only later scientists learned that the so-called “healthier cigarettes” were a deceptive way to mitigate consumers’ health concerns and to keep them in pre-contemplation stages: a strategy to undermine cessation. ENDS have been aggressively marketed using similar tactics.

A randomized controlled trial compared the effectiveness of ENDS with nicotine replacement therapy (NRT) for “smoking cessation.”<sup>(12)</sup> It was one of the top ten most read articles between January and July in 2019 (year of publication). The study has multiple and important biases: researchers did not ensure that each group used only one of the medications (3% of ENDS users also used NRT, and 20% of those using NRT also used ENDS), there was no objective method to assess adherence, behavioral support officers knew the groups to which the patients had been allocated, and intention-to-treat analysis was not carried out. The 1-year abstinence rate was 18.0% and 9.9% in the EC and NRT groups, respectively. The abstinence rate in the NRT group was half the rates that are typically found in NRT trials: Rosen et al.<sup>(13)</sup> selected three systematic reviews published by the Cochrane Collaboration involving 61 randomized clinical trials involving first-line smoking cessation medications and investigated smoking cessation within 6 and 12 months of follow-up. The meta-analysis showed that 19.8% of the participants who used NRT remained abstinent at 12 months.<sup>(8)</sup>

There are nearly 2,000 chemicals that are inhaled with the use of ENDS, most of which are ignored.<sup>(14)</sup> ENDS aerosol is not harmless “water vapor”: it contains heavy metals, ultrafine particulates, and cancer-causing agents. ECs are cigarettes! Therefore, they share the same adverse health effects of combustible cigarettes and also have their own specific risks, such as the so-called *e-cigarette or vaping use-associated lung injury*.<sup>(15)</sup> The consequences of long-term use of these devices remain unknown.<sup>(15)</sup>

Health care professionals must adhere to the Hippocratic principle *primum non nocere* (do no harm). ECs are not a smoking cessation treatment. Using ENDS causes diseases, replicates behavioral and social characteristics of smoking, perpetuates nicotine addiction, and renormalizes smoking.

## CONFLICTS OF INTEREST

None declared.

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