



Editorial

Electronic Nicotine Delivery Systems: The New Threat



In recent years, a new way of consuming tobacco has appeared. It involves the use of Electronic Nicotine Delivery Systems (ENDS) through which the user is able to administer nicotine and other toxic substances in a way that is supposedly less harmful to health than with the use of combustible cigarettes (CCs)¹. Electronic cigarettes (ECs) and Heat Not Burnt Tobacco (HNBT) are the two most common types of these devices. The production, distribution, marketing and sale of all of them are mainly in the hands of the tobacco industry (TI). They are now the most commonly used tobacco product among adolescents^{1,2}.

Both ECs, if they contain nicotine, and the use of HNBT have been shown to cause addiction. Besides, they cause the ingestion of toxic substances such as propylene glycol, nitrosamines, formaldehyde, acetaldehyde, acrolein, etc., which are responsible for the fact that its users can develop cancers, EVALI (E-cigarette, or Vaping, product use Associated Lung Injury), a predisposition to suffer pulmonary infectious diseases and other pathological processes^{3,4}.

It is well known that the diffusion of the use of these types of devices correspond to a new strategy of the TI that knows the sale of their CCs has fallen year after year since 2009, at which time up to 5.96 trillion cigarettes were consumed until 2020, when their consumption was 5.18 trillion⁵. For this reason, TI is dedicating a good part of its investment to promote the use of ECs and HNBT, spreading false messages in favor of the use of these devices for harm reduction and smoking cessation. These efforts are clearly visible on Altria's website, where large headlines read: "Moving beyond smoking: from tobacco company to Tobacco harm reduction company"⁶. Furthermore, Philip Morris International (PMI) has invested more than four billion dollars since 2018 in its Foundation for a Smoke-Free World to promote scientific research on noncombustible and safer nicotine alternatives to cigarettes.

Although there is discussion, all the independent scientific research indicates that neither ECs nor HNBTs are effective to help smokers to quit. The latest Cochrane review points out that there is high-certainty evidence that ECs with nicotine increase quit rates compared to Nicotine Replacement Therapy and moderate-certainty evidence that they increase quit rates compared to ECs without nicotine. Nevertheless, it cautions that studies are small, the effect side is unconfirmed and the longest follow up was two years⁷. In addition, the safety problems of these devices in the medium and long term are totally unknown, and the investigation in this regard indicates that there are reasons for concern⁸. On the other hand, harm reduction strategies for tobacco control have never worked and we have sad experiences like low nicot-

tine cigarettes⁹. Without forgetting that most studies suggest that the use of ECs to quit smoking does not work and that up to 70% of those who use them become dual smokers, that is, smokers of both CCs and ECs at once.¹⁰ Besides, it has even been shown that the use of these devices by young people often makes them smoke CCs. Meta-analysis of seven studies that included over 8000 adolescents and young adults who were not cigarette smokers at baseline found that among those who had ever used ECs, the probability of CCs smoking initiation was nearly four-fold greater than nonusers¹¹. It is noteworthy that the vast majority of surveys from different countries show that the prevalence of ECs consumption among children and adolescents increases exponentially. In our country, data from the 2022 ESTUDES study that analyzes the prevalence of ECs use among students aged 14–18 show that 44.3% of them have tried them at least once in their lives and 22.2% in the last twelve months¹². Data for the years 2014 and 2016 were 17 and 20.1% respectively for consumption at least once in a lifetime¹³. Similar figures occur in other countries. For instance, among US middle and high school students, both ever and past-30-day ECs use has more than tripled since 2011¹⁴.

Several reasons explain this disproportionate increase in the use of ECs by children and adolescents. Some of them are as follows: the product design, flavors, marketing, and perception of safety and acceptability. All these aspects increase the appeal of these products to young people. In addition, ECs advertisements on Internet sites, retail stores, movies and other media are associated with growing use among teenagers¹⁴. Flavoring and taste are crucial reasons to increase the use of ECs among youngsters. The more the offer of flavors increases, the more the number of young people who use ECs. Even, Tobacco Companies, the main manufacturers of ECs, employ diverse strategies to target marketing to children and persons less than 18 years of age in order to attract them to these products. Advertising near middle and high schools, in neighborhoods with high youth traffic and doing free offers of these products in bars and other entertainment venues. Packaging and display choices, such as candy and fruit images on the packaging and displays close to candy are other strategies that facilitate the use of these products by children¹⁴.

All the considerations explained indicate that the ENDS at the present time is the main threat for the control of the Tobacco Pandemic. It is urgent to implement measures aimed at reducing the consumption of these devices. These must include: increasing public awareness of the toxicity of these products and their ineffectiveness in smoking cessation and reducing its associated diseases,

legally regulating these products as tobacco products and applying existing regulations regarding their distribution, sale, advertising and control; banning the use of flavorings as well as the use of shapes and colors in these products with the capacity to attract young people, promoting independent research into the damage that these products cause to health and monitoring of epidemiological data on their consumption. Until these new forms of tobacco consumption are stopped, we will not be able to meet the objectives of the Endgame strategy¹⁵.

Conflict of interests

Dr. Carlos A. Jiménez-Ruiz ha recibido honorarios por ponencias, cursos patrocinados y participación en estudios clínicos por parte de: Aflofarm, Bial, Gebro Pharma, GSK, Johnson&Johnson y Pfizer.

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