

New Tobacco and Nicotine-based Products: Lifting the Smoke Screen



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■ Introduction

Tobacco is the **leading preventable cause of death in France**, accounting for 75,000 deaths in 2015, or 13% of all deaths, and is a major cause of cancer,¹ cardiovascular disease and respiratory disease.² According to the French Monitoring Centre for Drugs and Drug Addiction (OFDT), the social cost³ of smoking amounted to €156 billion in 2019.⁴

Despite a decline in tobacco consumption in France in recent years,⁵ 24.5% of adults aged 18-75, 15.6% of 17-year-olds and 3.7% of year 10 students (14 to 15-year-olds) report smoking tobacco on a daily basis.⁶ These are **particularly high percentages** compared with other OECD countries⁷ and are marked by significant **social inequalities**⁸.

Tobacco addiction is caused mainly by the nicotine it contains⁹ and is a **chronic disease with a high relapse rate**. In 2021, a large proportion of daily smokers in France (59.3%) reported that they wanted to give up smoking, while almost one in three (30.3%) said they had tried to quit smoking for at least one week in the previous year.¹⁰

The French National Authority for Health (HAS) recommends **nicotine replacement therapy (NRT)**, which is available in various forms (transdermal patches, chewing gum, tablets, oral sprays, etc.), as a first-line treatment.¹¹ These products, which are reimbursed at a rate of 65% on prescription¹² but are also available over the counter, can increase the chances of quitting smoking

Summary

- *As new ways of consuming nicotine, a number of recently introduced products are being presented as “alternatives to smoking tobacco”.*
- *However, little is known about their risk-to-benefit ratio and their place in the fight against smoking is the subject of much debate, with some advocating a risk-reduction strategy and others invoking a precautionary principle.*
- *It is necessary to conduct further research to consolidate our knowledge of these products, to better regulate their marketing and to inform consumers on the basis of available data.*

Gérard Leseul, Member of the National Assembly
Catherine Procaccia, Senator

within 6 months by 50-70%. They were used by more than one million smokers in 2022.¹³

■ New products

Over the past decade or so, new products have been marketed as “alternatives to smoking tobacco”, claiming to reduce the health risks associated with smoking.

Electronic cigarettes,¹⁴ which first appeared in France in around 2010, are devices that reproduce the sensations of a traditional cigarette while avoiding exposure to the toxic substances emitted during combustion. A liquid (also known as an “e-liquid”, made up of propylene glycol, vegetable glycerine, flavourings, additives and – often, but not necessarily – nicotine) is heated by a resistance (or coil) to produce a vapour that the user inhales. In 2022, 7.3% of adults used an electronic cigarette and 5.5% used them daily (compared with 3.8% and 2.7% respectively in 2017).¹⁵ Among 17-year-olds, 6.2% reported using them on a daily basis in 2022 (compared with 1.9% in 2017).¹⁶

Since their invention, several types of electronic cigarettes have appeared on the market.¹⁷ In 2021, **disposable electronic cigarettes** (known as “puffs”) became available in France. Vaunted by industry experts for their convenience and ease of use,¹⁸ these devices are deliberately targeted at young people,¹⁹ particularly through their attractive packaging and prices, despite the fact that selling to minors is banned – a ban that is rarely enforced.²⁰ As they are disposable, they have a significant environmental footprint.²¹

Heated tobacco products (also marketed as heat-not-burn), available in France since 2017, are electronic devices that heat tobacco but do not burn it, as their name suggests.²² Although on the rise,²³ the use of this type of product remains relatively limited, with only 0.1% of adults in France reporting current use in 2022.²⁴

Chewing tobacco and snuff are nothing new,²⁵ but they are sometimes presented as “reduced risk” products because they do not involve combustion.²⁶ Chewing tobacco and snuff accounted for less than 1% of total tobacco sales in France in 2022.²⁷

Since 2022, **nicotine pouches**²⁸ have been introduced to the market as a tobacco-free version of the Swedish “*snus*”, which is banned in the rest of the European Union. Since there are no clinical trials to prove their effectiveness as withdrawal aids, they are not considered as nicotine replacement therapies. They appeared after the adoption of Directive 2014/40/EU on tobacco and related products,²⁹ which did not foresee the emergence of such products, and are currently in a legal grey area.

■ How harmful are these products?

Although it took several decades to be demonstrated fully, the serious harmful effects of tobacco smoking are now well documented and the subject of widespread consensus.³⁰

When it comes to new tobacco or nicotine-based products, that are placed on the market without prior assessment, there is a **lack of scientific knowledge**.

The few studies available mainly assess the chemical composition of the emissions associated with the use of these products and, in some cases, their toxicological effects at tissue, cellular or molecular level. However, these studies are only **weak predictors of health risks** and are by no means a substitute for epidemiological studies, which follow consumers over long periods of time, enabling the morbidity and mortality associated with these products to be fully assessed.

The majority of experts agree that **the emissions from electronic cigarettes are less harmful than tobacco smoke**.³¹ However, the fact that they are less harmful does not mean that they are completely safe, as these devices **produce a number of toxic substances**.³² Assessing them is a particularly complex task due to the large number of devices and flavours that can be used.³³ Besides, less harmful emissions do not necessarily mean a proportional reduction in health risks to users.

In 2015, Public Health England reported that e-cigarette use was 95% safer than smoking tobacco,³⁴ a claim that it stood by in 2022³⁵ despite being disputed by some in the scientific community.³⁶ In France, the French High Council for Public Health (HCSP) estimated in 2021 that, in the absence of comparative epidemiological data, it was not possible to demonstrate a reduced health risk when

switching from smoking tobacco to electronic cigarettes,³⁷ although this could be assumed in the case of **exclusive use** of electronic cigarettes.³⁸

On the other hand, even if it leads to smoking fewer cigarettes, **combining** the use of an electronic cigarette with smoking traditional cigarettes (known as “**dual use**”) **does not seem to have any effect on the risk profile for consumers** when compared with smoking traditional cigarettes alone.³⁹ In France, however, **more than half** of vapers continue to smoke at the same time.⁴⁰

With regard to **heated tobacco products**, the use of which is currently marginal in France, most of the scientific research has been carried out by the tobacco industry. According to a study by the Pasteur Institute in Lille, heated tobacco products may be less harmful than traditional cigarettes, but considerably more harmful than electronic cigarettes.⁴¹ Based on the available data, proof of **reduced health risks** for users **remains to be established**.⁴²

According to the International Agency for Research on Cancer (IARC), **oral forms of tobacco** are associated with oral and dental problems, cancers – of the mouth, oesophagus and pancreas, but not of the lungs – and are likely to increase the risk of vascular disease⁴³. However, despite these risks, some studies suggest that, for smokers, switching to “*snus*” alone could reduce the health risks.⁴⁴

Similarly, the German Federal Institute for Risk Assessment has estimated that, for smokers, switching to **nicotine pouches** could reduce the health risks.⁴⁵

■ Are these products a solution to help people stop smoking?

Setting aside the question of their harmful effects, the risk reduction likely to be achieved by these products depends on their effectiveness in replacing tobacco smoking rather than leading to dual use.⁴⁶

With regard to the effectiveness of e-cigarettes as a smoking cessation tool, the available studies are few in number and have produced **conflicting results**.⁴⁷ While some literature reviews conclude that the use of electronic cigarettes is more effective in smoking cessation than nicotine replacement therapy (NRT),⁴⁸ others, including the one conducted by the French High Council for Public Health in 2021, consider that the available data is insufficient to draw such a conclusion.⁴⁹ A cohort study carried out by Inserm researchers has also shown that in the medium term (2 years), people who used electronic cigarettes as a method of quitting smoking are **more likely to return to smoking** than those who used other methods.⁵⁰

Nevertheless, electronic cigarettes are one of the **most widely used** smoking cessation aids among French smokers.⁵¹ This is probably due to their availability and

their similarity to traditional cigarettes, which makes them more attractive to smokers. In 2017, Santé Publique France reported that since they appeared on the French market, 870,000 smokers believed e-cigarettes had helped them to quit.⁵² They therefore appear to be a new option to add to the range of smoking cessation aids available and could play an important role for those who are unable or unwilling to use traditional nicotine replacement therapies.⁵³

For **heated tobacco**,⁵⁴ **oral tobacco products**⁵⁵ and **nicotine pouches**, **the available evidence is insufficient to draw conclusions** about their effectiveness as substitutes for smoking tobacco.⁵⁶

■ A gateway to smoking?

These products present different types of risk, which need to be assessed not only from an individual point of view, but also from a **societal perspective**. This is because they could expose non-smokers to a **new risk**, or delay – or even prevent – some smokers from quitting. A number of public health bodies, including the World Health Organization (WHO), are particularly concerned that electronic cigarettes and heated tobacco products could **encourage smoking** due to the addictive nature of the nicotine they contain and the **social normalisation of smoking** that they may promote.⁵⁷

According to Santé Publique France, the vast majority of adult vapers are smokers or ex-smokers,⁵⁸ and they mainly use **electronic cigarettes as a means of quitting, substituting or reducing their tobacco consumption**.⁵⁹ For adults, the risk of a “gateway” effect towards smoking therefore seems very limited.

When it comes to young people (adolescents), the data is **contradictory**.⁶⁰ Several international studies suggest that the use of **electronic cigarettes** at a young age is **significantly associated with smoking** later on in life,⁶¹ although **causality has not yet been proven**.⁶² However, a study in France found that among 17-year-olds who had already smoked tobacco, those who had experimented with electronic cigarettes were **less likely to switch to daily smoking later on in life** than those who had not.⁶³

More recently, the emergence of **disposable electronic cigarettes** (known as “puffs”) has changed the way electronic cigarettes are perceived by young people and contributed to their **increased popularity**,⁶⁴ renewing the debate on entry into vaping and smoking. In 2022, the French Alliance Against Tobacco (ACT) reported that 13% of adolescents aged between 13 and 16 had already used a “puff”, and that for 28% of them, it was the first time they had consumed nicotine.⁶⁵

More generally, the attractive nature of e-liquid **flavours** (fruit, mint and menthol, desserts and sweets, etc.) is thought to play an **important role in encouraging**

young people to try and use vaping products.⁶⁶ However, flavoured e-liquids are also widely used by adults⁶⁷ and have been shown to **increase the effectiveness of the electronic cigarette as a smoking cessation tool**.⁶⁸ While a ban on certain flavours could help reduce vaping among young people, it could also make electronic cigarettes less attractive as a smoking cessation aid.⁶⁹ Feedback from recent bans in other countries does not yet allow us to fully assess the impact of these decisions in terms of usage patterns.⁷⁰

In the case of **heated tobacco** products, some studies seem to support the idea that they act as a **gateway to smoking**, but given their recent emergence, these studies remain to be confirmed.⁷¹

With regard to **oral tobacco products**, US studies suggest that their use may lead to the consumption of traditional cigarettes, while Swedish data shows no such trend for the use of “snus”.⁷²

Although there are currently no studies on the risk of any link between smoking and **nicotine pouches**, nicotine pouches are considered to be particularly addictive due to the high dose of nicotine they contain (up to 47.5 mg per pouch) and the way in which they are consumed, which encourages its rapid absorption.⁴⁵ It is also **the fear of a “gateway” effect** that has led several countries to ban them as a precautionary measure (Belgium, the Netherlands, etc.).

■ Conclusion

The scientific uncertainties surrounding the assessment of the harmful effects of these products and their impact as a means to quit smoking or as an encouragement to maintain or start tobacco consumption are at the root of the **controversy over the public policies to be adopted**.

Because the **long-term risk-to-benefit ratio** is still poorly understood and is the subject of much debate in the scientific community,⁷³ legislation on **electronic cigarettes** varies widely from one country to another:⁷⁴ the WHO lists 34 countries that have banned the sale of these devices,⁷⁵ while the UK considers them as a tool that could help the country become smoke-free by 2030.⁷⁶

Several countries have banned or are considering **banning the sale of “puffs”** (New Zealand, Germany, Belgium, United Kingdom, etc.) or have **restricted the flavours** contained in e-liquids (Iceland, Netherlands, Denmark, etc.).

At the international level, the World Health Organization (WHO) is urging caution.⁷⁷ In France, this is also the case for the French High Council for Public Health (HCSP), which, after recognising that electronic cigarettes could be considered a “*tool to reduce the risks of smoking*” in

2016,⁷⁸ considered that they could not be presented as such in general terms in 2021.⁷⁹

With regard to **smokeless tobacco products**, for which the available data is more limited, there seems to be a consensus on the need to regulate them.

■ Recommendations

- Rapidly launch **new independent nationwide studies** on the specific and relative harmful effects of these different products and their impact on smoking.

In particular, there is a need for **independent studies** on the use of heated tobacco products (heat-not-burn) to provide the evidence needed to guide future public policy decisions.

In future, as soon as new tobacco or nicotine-based products are placed on the market, studies should be carried out rapidly to assess their harmful effects.

Given the human and financial costs associated with this public health issue, all relevant research and funding bodies should be involved in this effort. **Manufacturers should be required to contribute** to the funding of this work, for example by increasing the fees they pay for the declaration of new products.

- Request the French Agency for Food, Environmental and Occupational Health and Safety (ANSES) to rapidly publish the **health risk assessment** it is currently preparing for all these products,⁸⁰ and to update its work regularly in order to provide the most reliable data possible.
- Ensure that legislative and regulatory decisions on these products (restrictions, bans, etc.) are based on the **best available scientific knowledge**.
- Provide consumers with **clear, comprehensive and objective information** about the knowledge and uncertainties surrounding these products.

Investigate the relevance of a *"noci-score"* (a scale for rating the harmfulness of tobacco and nicotine-based products) to inform consumers about the relative harmfulness of different products.

- Launch a public prevention campaign on the **risks associated with dual use** (the simultaneous use of traditional cigarettes and an electronic cigarette).
- Ban **so-called "child-friendly" flavours** (those most likely to encourage children to vape, inspired by sweets or with suggestive names).⁸¹

Carry out studies on the potential risks of flavourings and the effects they may have on both quitting smoking and taking up smoking, and adapt the list of restrictions accordingly.

- Increase controls and toughen penalties for the **sale of tobacco or nicotine-based products to minors**.⁸²

Investigate the impact of introducing plain packaging to make vaping products less attractive.

- **Ban "puffs"** to prevent their environmental impact and, as a precautionary measure, the risk that their attractiveness may pose.
- While quitting should be the ultimate goal for all smokers, a risk reduction approach should be implemented for smokers who are unable or unwilling to use traditional nicotine replacement therapies, following the example of the United Kingdom, which has included electronic cigarettes in its strategy to create a smoke-free society.
- Rapidly develop a **regulatory framework** for new oral nicotine products (particularly pouches) and other products likely to emerge.

The Office's websites:

<http://www.assemblee-nationale.fr/commissions/opezst-index.asp>

<http://www.senat.fr/opezst>

Persons consulted

Sébastien Anthérieu, Lecturer in Toxicology at the University of Lille

Pierre Arwidson, Deputy Director of Prevention and Health Promotion at Santé Publique France, Alima Marie-Malikité, Principal Private Secretary to the Managing Director of Santé Publique France, Suzanne Garcia, Apprentice Private Secretary to the Managing Director of Santé Publique France

Benoit Bas, Corporate Affairs and Communications Director of Japan Tobacco France

Bernard Basset, Chairman of Addictions France, and Indra Seeburun, Research Officer at Addictions France

Mehdi Benkhébil, Director of Surveillance at the National Agency for the Safety of Medicines and Health Products (ANSM), Alban Dhanani, Deputy Director of Medical Directorate 2 at the ANSM, Malak Abou-Taam, Head of the Analgesia, Anaesthesia, Rheumatology and Addictive Medicines Unit at the ANSM, and Frédéric Dittenit, Deputy Director of Regulation and Ethics at the ANSM

Ivan Berlin, University Lecturer and Hospital Practitioner at the Pitié-Salpêtrière University Hospital

Claude Bamberger, Chairman of the Independent Association of Electronic Cigarette Users (AIDUCE)

Vincent Durieux, Chairman of France Vapotage, and Florence Meslet, Managing Director of France Vapotage

Norbert Ifrah, President of the French National Cancer Institute (INCa), Thierry Breton, Managing Director of INCa, Jérôme Foucaud, Head of the SHS, Public Health and Epidemiology Research Department at INCa, Frédéric de Bels, Head of the Prevention Department at INCa, and Alexandre Cobigo, Project Manager in the Prevention Department at INCa

Loïc Josseran, President of the Alliance Against Tobacco (ACT), Marion Catellin, Managing Director of ACT, and Martin Drago, Head of Advocacy at ACT

Benoît Labarbe, Head of the Tobacco and Related Products Evaluation Unit at the French Agency for Food, Environmental and Occupational Health & Safety (Anses), Eric Vial, Director of Risk Assessment at Anses, and Sophie Le Quellec, Director of Communication and Institutional Relations at Anses

Cyril Lalo, Director of External Relations at SEITA

Anne-Laurence Le Faou, University Lecturer and Hospital Practitioner at the Hôpital Européen Georges Pompidou

William Lowenstein, Chairman of SOS Addictions

Pascal Marbois, Director of Public Affairs and Communications at British American Tobacco (BAT), Vincent Zappia, Head of Public Affairs at BAT, and Charlotte Scales, Head of Public Affairs at BAT

Yves Martinet, Chairman of the National Committee for Tobacco Control (CNCT), Emmanuelle Béguinot, Managing Director of the CNCT, and François Topart, Head of Advocacy and Research at the CNCT

Stéphanie Martel, Director of External Affairs at Philip Morris France

Jean Moiroud, Chairman of the Fédération interprofessionnelle de la vape (Fivape), Selim Denoyelle, Managing Director of Fivape, and Agnès Dubois-Colineau, Senior Advisor at Arcturus

Ivana Obradovic, Deputy Director of the French Monitoring Centre for Drugs and Drug Addiction (OFDT), Stanislas Spilka, Head of the OFDT Data Unit, and Isaora Rivierez, Research Officer at the OFDT

Elise Riva, Head of the Addiction Prevention Office at the Directorate-General for Health (Direction générale de la Santé - DGS), Sylvain Gueho, Deputy Head of the Addiction Prevention Office, and Maria-Alejandra Cardenas, Public Policy Officer for Tobacco Control

Anne Stoebner-Delbarre, Chair of the Unicancer Oncology and Addiction Group

Written contributions from:

Maria Melchior, Research Director at the French National Institute of Health and Medical Research (Inserm) in the Social Epidemiology Research Team

Rémy Slove, Chief of Staff at the Directorate-General for Competition Policy, Consumer Affairs and Fraud Control (Direction générale de la concurrence, de la consommation et de la répression des fraudes - DGCCRF)

Katia Wehbe, Science Attaché at the French Embassy in the United Kingdom, and Minh-Hà Pham, Counsellor for Science and Technology at the French Embassy in the United Kingdom

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¹ Smoking is the leading preventable risk factor for cancer: each year, 68,000 new cases of cancer and 40,000 deaths are attributed to smoking, accounting for almost 20% of all new cancer cases and 50% of preventable cancer cases. See: French National Cancer Institute (INCa), “Panorama des cancers en France”, 2022 (<https://www.e-cancer.fr/Expertises-et-publications/Catalogue-des-publications/Panorama-des-cancers-en-France-Edition-2022>).

² In 2015, 75,000 deaths were attributed to smoking, i.e. 13% of all deaths. See: C. Bonaldi et al., *Weekly Epidemiological Record*, 2019, 15, 278 (http://beh.santepubliquefrance.fr/beh/2019/15/2019_15_2.html).

³ The social cost is the sum of the value of the loss of quality of life, the value of years of life lost and the value of lost productivity for businesses and the government, plus public expenditure.

⁴ P. Kopp, “Le coût social des drogues: estimation en France en 2019”, OFDT, 2023 (<https://www.ofdt.fr/BDD/publications/docs/eisxpk2d7.pdf>).

⁵ This decline has been mainly observed in the youngest age groups (18-44). See: A. Pasquereau et al., *Weekly Epidemiological Record*, 2022, 26, 470 ().

⁶ Data from 2022 for adults and 17-year-olds, and from 2021 for year 10 students.

See: a) A. Pasquereau et al., *Weekly Epidemiological Record*, 2023, 9-10, 152 (http://beh.santepubliquefrance.fr/beh/2023/9-10/2023_9-10_1.html); b) OFDT, “Les drogues à 17 ans. Analyse de l'enquête ESCAPAD 2022”, *Tendances informationnel letter* No. 155, 2023 (<https://www.ofdt.fr/BDD/publications/docs/efxof2d3.pdf>); c) OFDT, “Usages d'alcool, de tabac et de cannabis chez les élèves de 3^e en 2021”, *Tendances informationnel letter* No. 148, 2021 (<https://www.ofdt.fr/BDD/publications/docs/efxss2bc.pdf>).

⁷ OECD, “Tabagisme chez les adultes” in “Panorama de la santé 2019”, 2019 (https://www.oecd-ilibrary.org/social-issues-migration-health/panorama-de-la-sante-2019_70cbd7cb-fr).

⁸ The prevalence of daily smoking is particularly correlated with level of education (30.8% among those with no qualifications or qualifications below the Baccalauréat, the French academic qualification awarded at the end of secondary education, and 16.8% among those with higher education qualifications), level of income (33.6% among the third of the population with the lowest income and 21.4% among the third with the highest income) and employment status (42.3% among the unemployed and 26.1% among the employed). See: A. Pasquereau et al., *Weekly Epidemiological Record*, 2023, 9-10, 152 (http://beh.santepubliquefrance.fr/beh/2023/9-10/2023_9-10_1.html).

⁹ US Department of Health and Human Services, “The Health Consequences of Smoking – 50 Years of Progress: A Report of the Surgeon General” 2014 (<https://www.cdc.gov/tobacco/sqr/50th-anniversary/index.htm>).

¹⁰ A. Pasquereau et al., *Weekly Epidemiological Record*, 2022, 26, 470 (http://beh.santepubliquefrance.fr/beh/2022/26/2022_26_1.html).

¹¹ Varenicline (Champix®) or Bupropion (Zyban®) may be prescribed as a second-line treatment, but they carry a higher risk of serious side effects.

See: French National Authority for Health, “Arrêt de la consommation de tabac: du dépistage individuel au maintien de l'abstinence en premier recours”, *Practice Guidelines*, 2014 (https://www.has-sante.fr/jcms/c_1718021/fr/arr-et-de-la-consommation-de-tabac-du-depistage-individuel-au-maintien-de-l-abstinence-en-premier-recours).

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¹² Since 1st January 2016, these products can also be prescribed by nurses, physiotherapists, midwives, dentists and occupational physicians.

¹³ This number has increased in recent years. See: M.-A. Douchet, “Tabagisme et arrêt du tabac en 2022”, 2023 (https://www.ofdt.fr/ofdt/fr/tt_23bil.pdf).

¹⁴ The terms “e-cigarettes” and “vapes” are also used. In scientific literature, the terms “electronic nicotine delivery systems (ENDS)”, and “electronic non-nicotine delivery systems (ENNDS)” when the e-liquid used does not contain nicotine, are also used.

¹⁵ a) A. Pasquereau et al., *Weekly Epidemiological Record*, 2023, 9-10, 152 (http://beh.santepubliquefrance.fr/beh/2023/9-10/2023_9-10_1.html); b) A. Pasquereau et al., “Baromètre de Santé publique France 2017. Usage de la cigarette électronique, tabagisme et opinions des 18-75 ans”, 2019 (<https://www.santepubliquefrance.fr/determinants-de-sante/tabac/documents/enquetes-etudes/barometre-de-sante-publique-france-2017.-usage-de-la-cigarette-electronique-tabagisme-et-opinions-des-18-75-ans>).

¹⁶ This figure includes both refillable and disposable electronic cigarettes. In 2022, 30.7% of 17-year-olds reported having used them recently (at least once in the last month). See: OFDT, “Les drogues à 17 ans. Analyse de l'enquête

¹⁷ The first models (known as “cigalikes” because of their resemblance to traditional cigarettes) have mainly been replaced by larger, refillable and adjustable systems (such as “vape pens”, “boxes” or “mods”) known as “open systems”. More recently, compact, easy-to-use models (“closed systems”) known as “pods” (refillable, using a disposable cartridge) and “puffs” (disposable) have emerged. See: French Agency for Food, Environmental and Occupational Health & Safety, “*Étude sur les pratiques de consommation des usagers de cigarettes électroniques en France: appui à la caractérisation des expositions*”, 2022 (<https://www.anses.fr/fr/system/files/TABAC2020SA0017Ra.pdf>).

¹⁸ According to the manufacturers marketing them, these disposable electronic cigarettes would be of interest to adults who would like to avoid certain difficulties associated with the use and maintenance of traditional electronic cigarettes (higher initial cost, size of the device, need to refill it, risk of leaks, etc.).

¹⁹ In the United States, the Food and Drug Administration has criticised the Juul Labs brand for creating an “epidemic” of vaping among young people through aggressive marketing. See: FDA, “*FDA warns JUUL Labs for marketing unauthorized modified risk tobacco products, including in outreach to youth*”, 2019 (<https://www.fda.gov/news-events/press-announcements/fda-warns-juul-labs-marketing-unauthorized-modified-risk-tobacco-products-including-outreach-youth>).

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²⁰ UFC-Que Choisir, “*Cigarettes électroniques: interdites aux mineurs, vraiment?*” 2023 (<https://www.quechoisir.org/actualite-cigarettes-electroniques-puffs-camera-cachee-interdites-aux-mineurs-vraiment-n107898/>).

²¹ Because they contain a non-removable lithium battery, used “puffs” are classified as waste electrical and electronic equipment (WEEE) and require specific recycling. However, it would appear that a significant proportion of this waste is not being properly recycled. See: a) L. Smith and N. Sutherland, “*The environmental impact of disposable vapes*”, *Commons Library debate pack* 2022 (<https://commonslibrary.parliament.uk/research-briefings/cdp-2022-0216/>); b) “*La cigarette électronique jetable “puff”, un fléau environnemental et sanitaire qu’il faut interdire d’urgence*”, *Le Monde* 2023 (https://www.lemonde.fr/idees/article/2023/04/30/la-cigarette-electronique-jetable-puff-un-fleau-environnemental-et-sanitaire-qu-il-faut-interdire-d-urgence_6171614_3232.html).

²² First invented in 1988, but initially unsuccessful, this type of product has become more popular in recent years. See: E. Simonavicius *et al.*, *Tob. Control* 2019, 28, 582 (<https://doi.org/10.1136/tobaccocontrol-2018-054419>).

²³ According to the European Commission, the volume of sales of heated tobacco products in France is estimated to have increased by 406% between 2018 and 2020. See: European Commission, “*Report from the Commission on the establishment of a substantial change of circumstances for heated tobacco products in line with Directive 2014/40/EU*”, 2022 (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022DC0279&qid=1655456179686>).

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²⁴ A. Pasquereau *et al.*, *Weekly Epidemiological Record*, 2023, 9-10, 152 (http://beh.santepubliquefrance.fr/beh/2023/9-10/2023_9-10_1.html).

²⁵ On the contrary, these forms of tobacco correspond to products that have historically been replaced by smoked tobacco. See: D. Nourrisson, *History, Economy and Society Journal*, 1988, 4, 535 (<https://doi.org/10.3406/hes.1988.2394>).

²⁶ a) *TobaccoTactics*, “*Newer Nicotine and Tobacco Products*” (<https://tobaccotactics.org/article/newer-nicotine-and-tobacco-products/>); b) *TobaccoTactics*, “*Smokeless Tobacco*” (<https://tobaccotactics.org/article/smokeless-tobacco/>).

²⁷ However, between 2018 and 2022, while overall tobacco sales fell by 19%, chewing tobacco sales increased by 12%.

See: Directorate-General of Customs and Indirect Taxes, “*Données statistiques des ventes de tabac en France continentale et en Corse (source: Logista)*”, 2023 (<https://www.douane.gouv.fr/actualites/les-ventes-de-tabac-en-france>).

²⁸ These pouches contain plant-based fibres, flavourings, additives and nicotine.

In 2021, it was reported that 0.3% of adults in the European Union used these products, mainly in Scandinavian and Eastern European countries. See: J. Lietzmann and M. Moulac for the European Parliament Committee on the Environment, Public Health and Food Safety “*Novel tobacco and nicotine products and their effects on health*”, 2023 ([https://www.europarl.europa.eu/RegData/etudes/IDAN/2022/740068/IPOL_IDA\(2022\)740068_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/IDAN/2022/740068/IPOL_IDA(2022)740068_EN.pdf)).

²⁹ Directive 2014/40/EU of the European Parliament and of the Council of 3 April 2014 on the approximation of the laws, regulations and administrative provisions of the Member States concerning the manufacture, presentation and sale of

tobacco and related products and repealing Directive 2001/37/EC (<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0040>).

³⁰ a) R. Doll, *Stat. Methods Med. Res.* 1998, 7, 87 (<https://doi.org/10.1177/096228029800700202>); b) US Department of Health and Human Services, “The Health Consequences of Smoking – 50 Years of Progress: A Report of the Surgeon General” 2014 (<https://www.cdc.gov/tobacco/sqr/50th-anniversary/index.htm>).

³¹ a) French Office for the Prevention of Smoking, “Rapport et avis d’experts sur l’e-cigarette”, 2013 (https://medias.vie-publique.fr/data_storage_s3/rapport/pdf/134000328.pdf); b) A. Pasquereau et al., “Baromètre de Santé publique France 2017. Usage de la cigarette électronique, tabagisme et opinions des 18-75 ans”, 2019 (<https://www.santepubliquefrance.fr/determinants-de-sante/tabac/documents/enquetes-etudes/barometre-de-sante-publique-france-2017.-usage-de-la-cigarette-electronique-tabagisme-et-opinions-des-18-75-ans>); c) National Academies of Sciences, Engineering, and Medicine, “Public Health Consequences of E-Cigarettes Public Health Consequences of E-Cigarettes”, 2018 (<https://nap.nationalacademies.org/catalog/24952/public-health-consequences-of-e-cigarettes>); d) “L’Académie nationale de médecine rappelle les avantages prouvés et les inconvénients indûment allégués de la cigarette électronique (vaporette)”, Press release from the French National Academy of Medicine, 2019 (<https://www.academie-medecine.fr/lacademie-nationale-de-medecine-rappelle-les-avantages-prouves-et-les-inconvenients-indument-allegues-de-la-cigarette-electronique-vaporette/>); e) Royal College of Physicians, “Nicotine without smoke: Tobacco harm reduction”, 2016 (<https://www.rcplondon.ac.uk/file/3563/download>).

³² a) P. Hajek et al., *Addiction* 2014, 109, 1801 (<https://doi.org/10.1111/add.12659>); b) P. Vanderkam et al., *Presse Med.* 2016, 45, 971 (<https://doi.org/10.1016/j.jpm.2016.05.026>); c) M. Williams et al., *PLoS ONE* 2017, 12, e0175430 (<https://doi.org/10.1371/journal.pone.0175430>); d) M. L. Goniewicz et al., *JAMA Netw. Open* 2018, 1, e185937 (<https://doi.org/10.1001/jamanetworkopen.2018.5937>); e) R. Bals et al., *Eur. Respir. J.* 2019, 53, 1801151 (<https://doi.org/10.1183/13993003.01151-2018>); f) R. Dusautoir et al., *J. Hazard. Mater.* 2021, 401, 123417 (<https://doi.org/10.1016/j.jhazmat.2020.123417>); g) R. S. Herbst et al., *Clin. Cancer Res.* 2022, 28, 4861 (<https://doi.org/10.1158/1078-0432.CCR-22-2429>).

Studies whose authors do not mention a link of interest with the tobacco, vaping or pharmaceutical industries are far more likely to conclude that electronic cigarettes have potentially harmful effects than those that do. See: C. Pisinger et al., *Prev. Med. J.* 2019, 119, 124 (<https://doi.org/10.1016/j.ypmed.2018.12.011>).

³³ In the European Union, vaping products are regulated by Directive 2014/40/EU, which limits the nicotine concentration of e-liquids and requires manufacturers to provide certain information about their composition and associated emissions. See: Directive 2014/40/EU of the European Parliament and of the Council of 3 April 2014 on the approximation of the laws, regulations and administrative provisions of the Member States concerning the manufacture, presentation and sale of tobacco and related products and repealing Directive 2001/37/EC (<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0040>).

In France, declarations from manufacturers (or importers) are received, processed and analysed by the French Agency for Food, Environmental and Occupational Health & Safety (ANSES). By the middle of 2020, the Agency reported that more than 33,000 vaping products were available on the French market. Based on these declarations and a review of the literature, a list of 1,775 chemical substances likely to be present in emissions from vaping products was compiled. See: French Agency for Food, Environmental and Occupational Health & Safety, “Priorisation des substances chimiques dans les émissions des produits du vapotage”, 2021 (<https://www.anses.fr/fr/system/files/TABAC2020SA0016Ra.pdf>).

In addition to this wide range of substances, the method of exposure makes it even more difficult to assess the risks: while many flavourings are considered safe when ingested orally, this is not necessarily the case when they are heated and inhaled. See: P. A. Tierney et al., *Tob. Control* 2016, 25, e10 (<https://doi.org/10.1136/tobaccocontrol-2014-052175>).

E-liquids can also contain harmful contaminants. In the United States, 2,807 hospital admissions, including 68 deaths, were attributed to the presence of vitamin E acetate in illegal or unregulated e-liquids containing THC in 2019. See: Centres for Disease Control and Prevention, “Outbreak of lung injury associated with the use of e-cigarette, or vaping, products” (https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html).

³⁴ Public Health England, “E-cigarettes: an evidence update”, 2015 (<https://www.gov.uk/government/publications/e-cigarettes-an-evidence-update#full-publication-update-history>).

³⁵ The Office for Health Improvement and Disparities, which replaced Public Health England in 2021, considered this statement to remain “broadly accurate”.

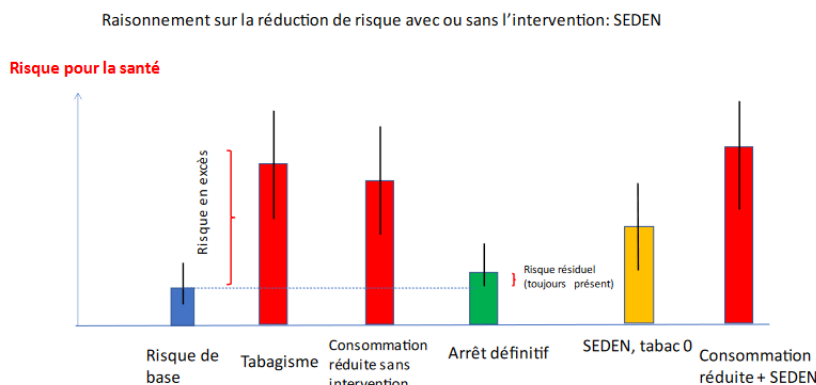
See: Office for Health Improvement and Disparities, “Nicotine vaping in England: 2022 evidence update”, 2022 (<https://www.gov.uk/government/publications/nicotine-vaping-in-england-2022-evidence-update>).

³⁶ a) “E-cigarettes: Public Health England’s evidence-based confusion”, *Lancet* 2015, 386, 829 (<https://www.sciencedirect.com/science/article/abs/pii/S0140673615000422>); b) M. McKee et al., *BMJ* 2015, 351, h4863 (<https://doi.org/10.1136/bmj.h4863>); c) T. Eisenberg et al., *Am. J. Public Health* 2020, 110, 161 (<https://doi.org/10.2105/AJPH.2019.305424>).

³⁷ HCSP, “Avis relatif aux bénéfices-risques de la cigarette électronique”, 2021 (<https://www.hcsp.fr/explore.cgi/avisrapportsdomaine?clefr=1138>).

It should be noted that this opinion has been contested by the scientific community. See: S. Couraud et al., “Sur la cigarette électronique, le Haut Conseil de la santé publique a une position “antivape” avec des arguments “antivax””, *Le Monde* 2022 (https://www.lemonde.fr/idees/article/2022/03/04/sur-la-cigarette-electronique-le-haut-conseil-de-la-sante-publique-a-une-position-antivape-avec-des-arguments-antivax_6116192_3232.html).

³⁸ In its opinion, the French High Council for Public Health hypothetically proposes this schematic representation of health risks as a function of consumption as a reasoning tool:



With the exception of possible cases of misuse, vaping products do not appear to pose an acute health risk. See: N. Franchitto et al., *Nicotine Tob. Res.* 2023, ntad116 (<https://doi.org/10.1093/ntr/ntad116>).

³⁹ See the endnote above.

This could be explained by the small reduction in risk due to reducing tobacco consumption and the risks associated with using an electronic cigarette.

A meta-analysis has even suggested that dual users may be exposed to greater risks, although the quality of the source studies is not sufficient to reach a definitive conclusion. See: C. Pisinger et al., *Int. J. Environ. Res. Public Health* 2022, 19, 13687 (<https://doi.org/10.3390/ijerph192013687>).

⁴⁰ The latest estimates for this proportion are 55.5% for vapers aged 18 to 75 (in 2021, according to Santé Publique France), 61% for adult vapers (in 2022, OpinionWay survey for ANSES) and 55.4% for 17-year-old vapers (in 2022, according to the French Monitoring Centre for Drugs and Drug Addiction).

See: a) A. Pasquereau et al., “Prevalence of vaping in France in 2021 among 18-75 year olds: results from the Santé Publique France health barometer”, *International scientific conference on e-cigarette*, Paris, 2022 (https://www.santepubliquefrance.fr/content/download/504854/document_file/591381_spf00004306.pdf?version=1); b) OFDT, “Les drogues à 17 ans. Analyse de l’enquête ESCAPAD 2022”, *Tendances informationnelle* No. 155, 2023 (<https://www.ofdt.fr/BDD/publications/docs/efxof2d3.pdf>); c) French Agency for Food, Environmental and Occupational Health & Safety, “Étude sur les pratiques de consommation des usagers de cigarettes électroniques en France: appui à la caractérisation des expositions”, 2022 (<https://www.anses.fr/fr/system/files/TABAC2020SA0017Ra.pdf>).

However, dual use may be worthwhile if it is part of a transition towards using only electronic cigarettes.

⁴¹ R. Dusautoir et al., *J. Hazard. Mater.* 2021, 401, 123417 (<https://doi.org/10.1016/j.jhazmat.2020.123417>).

⁴² a) B. Dautzenberg et al., *Journal of Respiratory Diseases*, 2019, 36, 82 (<https://doi.org/10.1016/j.jrmr.2018.10.010>); b) M. Jankowski et al., *Int. J. Occup. Environ. Med.* 2019, 32, 595 (<https://doi.org/10.13075/ijomeh.1896.01433>); c) A. Simonavicius et al., *Tob. Control* 2019, 28, 582 (<http://dx.doi.org/10.1136/tobaccocontrol-2018-054419>); d) WHO, “WHO study group on tobacco product regulation: Report on the scientific basis of tobacco product regulation: eighth report of a WHO study group”, *WHO Technical Report Series* 2021, 1029 (<https://www.who.int/publications/i/item/9789240022720>); e) C. N. Uguna et al., *ACS Omega* 2022, 7, 22111 (<https://doi.org/10.1021%2Facsomega.2c01527>); f) H. Tattan-Birch et al., *Cochrane Database Syst. Rev.* 2022, 1, CD013790 (<https://doi.org/10.1002/14651858.CD013790.pub2>).

⁴³ International Agency for Research on Cancer, “Smokeless Tobacco and Some Tobacco-Specific N-Nitrosamines”, *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans* 2007, 89 (<https://publications.iarc.fr/Book-And-Report-Series/Iarc-Monographs-On-The-Identification-Of-Carcinogenic-Hazards-To-Humans/Smokeless-Tobacco-And-Some-Tobacco-specific-Em-N-Em--Nitrosamines-2007>).

For a review of the health effects of smokeless tobacco products, see: *Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR)*, “Health effects of smokeless tobacco products”, 2008 (https://ec.europa.eu/health/archive/ph_risk/committees/04_scenihr/docs/scenihr_o_013.pdf).

Regarding “snus” specifically, a report from the Norwegian National Institute of Public Health has indicated that it is associated with an increased risk of pancreatic and oesophageal cancer, as well as an increase in blood pressure and

mortality caused by heart attacks and strokes, which is consistent with a Swedish meta-analysis showing an increase in cardiovascular mortality and all-cause mortality. See: a) Norwegian Institute of Public Health, "Health risks of Scandinavian snus consumption (English summary)", 2019 (<https://www.fhi.no/en/publ/2019/health-risks-from-snus-use2/>); b) M. L. Byhamre et al., *Int. J. Epidemiol.* 2021, 49, 2041 (<https://doi.org/10.1093/ije/dyaa197>).

⁴⁴ a) C. E. Gartner et al., *Lancet* 2007, 369, 2010 ([https://doi.org/10.1016/S0140-6736\(07\)60677-1](https://doi.org/10.1016/S0140-6736(07)60677-1)); b) K. E. Lund et al., *Nordisk Alkohol Nark.* 2021, 38, 586 (<https://doi.org/10.1177/14550725211021248>).

⁴⁵ Bundesinstitut für Risikobewertung, "Health Risk Assessment of Nicotine Pouches: Updated BfR Opinion No. 023/2022 of 7 October 2022", BfR-Stellungnahmen. Bundesinst. für Risikobewertung (<https://www.bfr.bund.de/cm/349/health-risk-assessment-of-nicotine-pouches.pdf>).

⁴⁶ As mentioned above for electronic cigarettes, the risk reduction resulting from a dual use would be very limited at best, due to the small risk reduction from smoking fewer cigarettes.

⁴⁷ A number of studies have shown that electronic cigarettes are no more effective than nicotine replacement therapy. See: a) R. A. Grana et al., *JAMA Internal Medicine* 2014, 174, 812 (<https://doi.org/10.1001%2Fjamainternmed.2014.187>); b) B. Kaplan et al., *Tob. Control* 2023, 32, 302 (<https://doi.org/10.1136/tobaccocontrol-2020-056448>).

While other studies show greater effectiveness. See: a) P. Hajek et al., *N. Engl. J. Med.* 2019, 380, 629 (<https://doi.org/10.1056/NEJMoa1808779>); b) M. Fekom et al., *Prev. Med. Rep.* 2022, 30, 102044 (<https://doi.org/10.1016/j.pmedr.2022.102044>).

⁴⁸ a) I. Grabovac et al., *Nicotine Tob. Res.* 2021, 23, 625 (<https://doi.org/10.1093/ntr/ntaa181>); b) J. Hartmann-Boyce et al., *Cochrane Database Syst. Rev.* 2022, 11, CD010216 (<https://doi.org/10.1002/14651858.CD010216.pub7>); c) J. Y. Levett et al., *Am. J. Med.* 2023, 136, 804 (<https://doi.org/10.1016/j.amjmed.2023.04.014>).

⁴⁹ Literature reviews in 2016 and 2017 concluded that the available studies did not demonstrate the effectiveness of electronic cigarettes for smoking cessation. See: a) M. Malas et al., *Nicotine Tob. Res.* 2016, 18, 1926 (<https://doi.org/10.1093/ntr/ntw119>); b) R. El Dib et al., *BMJ Open* 2017, 7, e012680 (<https://doi.org/10.1136/bmjopen-2016-012680>).

In 2018, a joint report by the US National Academies of Sciences, Engineering and Medicine reported "limited evidence" of their effectiveness. See: National Academies of Sciences, Engineering, and Medicine, "Public Health Consequences of E-Cigarettes Public Health Consequences of E-Cigarettes", 2018 (<https://nap.nationalacademies.org/catalog/24952/public-health-consequences-of-e-cigarettes>).

In 2019, WHO considered that the quantity and quality of available scientific evidence was insufficient to determine whether electronic cigarettes were effective in helping smokers to quit. See: WHO, "WHO report on the global tobacco epidemic, 2019: offer help to quit tobacco use", 2019 (<https://www.who.int/publications-detail-redirect/9789241516204>).

Finally, and more recently, reports prepared for the Irish and Australian Ministries of Health and the European Commission came to the same conclusion. See: a) J. Quigley et al., "Electronic cigarettes and smoking cessation: An evidence review", 2020 (<https://www.hrb.ie/publications/publication/electronic-cigarette-and-smoking-cessation-an-evidence-review/returnPage/1/>); b) E. Banks et al., "Electronic cigarettes and health outcomes: systematic review of global evidence", Report for the Australian Department of Health, 2022 (https://openresearch-repository.anu.edu.au/bitstream/1885/262914/1/Electronic%20cigarettes%20health%20outcomes%20review%202022_WCAG.pdf); c) Scientific Committee on Health, Environmental and Emerging Risks (SCHEER), "Opinion on electronic cigarettes", 2021 (https://health.ec.europa.eu/system/files/2022-08/scheer_o_017.pdf).

⁵⁰ R. Gomajee et al., *JAMA Intern. Med.* 2019, 179, 1193 (<https://doi.org/10.1001/jamainternmed.2019.1483>).

⁵¹ R. Guignard et al., *Weekly Epidemiological Record*, 2021, 1, 2 (<https://www.santepubliquefrance.fr/content/download/313307/2894602?version=1>).

⁵² A. Pasquereau et al., "Baromètre de Santé publique France 2017. Usage de la cigarette électronique, tabagisme et opinions des 18-75 ans", 2019 (<https://www.santepubliquefrance.fr/determinants-de-sante/tabac/documents/enquetes-etudes/barometre-de-sante-publique-france-2017.-usage-de-la-cigarette-electronique-tabagisme-et-opinions-des-18-75-ans>).

⁵³ However, due to the lack of knowledge about the health effects of long-term use, it is advisable to stop using electronic cigarettes as soon as the user is sure that he or she has successfully quit smoking.

⁵⁴ H. Tattan-Birch et al., *Cochrane Database Syst. Rev.* 2022, 1, CD013790 (<https://doi.org/10.1002/14651858.CD013790.pub2>).

⁵⁵ Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR), "Health effects of smokeless tobacco products", 2008 (https://ec.europa.eu/health/archive/ph_risk/committees/04_scenihr/docs/scenihr_o_013.pdf).

⁵⁶ A number of population-based studies have found inverse correlations between the use of these products and smoking tobacco, suggesting a causal link. However, other analyses attribute the observed reductions in smoking to the simultaneous introduction of smoking cessation measures.

See, for example, the case of “snus”: a) J. Foulds *et al.*, *Tob. Control* 2003, 12, 349 (<https://doi.org/10.1136%2Ftc.12.4.349>); b) C. Bates *et al.*, *Tob. Control* 2003, 12, 360 (<https://doi.org/10.1136/tc.12.4.360>); c) S. L. Tomar *et al.*, *Tob. Control* 2003, 12, 368 (<https://doi.org/10.1136/tc.12.4.368>); d) L.-E. Holm *et al.*, *Tob. Control* 2009, 18, 250 (<https://doi.org/10.1136/tc.2009.030221>).

⁵⁷ a) G. Sæbø *et al.*, *Int. J. Drug Policy* 2017, 49, 58 (<https://doi.org/10.1016/j.drugpo.2017.07.026>); b) WHO, “WHO report on the global tobacco epidemic, 2023: protect people from tobacco smoke”, 2023 (<https://www.who.int/publications-detail-redirect/9789240077164>).

⁵⁸ According to Santé Publique France, in 2019, only 1% of daily vapers said they had never smoked. See: A. Pasquereau *et al.*, “Baromètre de Santé publique France 2017. Usage de la cigarette électronique, tabagisme et opinions des 18-75 ans”, 2019 (<https://www.santepubliquefrance.fr/determinants-de-sante/tabac/documents/enquetes-etudes/barometre-de-sante-publique-france-2017.-usage-de-la-cigarette-electronique-tabagisme-et-opinions-des-18-75-ans>).

According to the OpinionWay survey conducted for the French Agency for Food, Environmental and Occupational Health & Safety (ANSES), the proportion of adult vapers who had never smoked (or only experimented) was 3% in 2023. However, the proportion is higher among young adults (18 to 24 year-olds). See: French Agency for Food, Environmental and Occupational Health & Safety, “Étude sur les pratiques de consommation des usagers de cigarettes électroniques en France: appui à la caractérisation des expositions”, 2022 (<https://www.anses.fr/fr/system/files/TABAC2020SA0017Ra.pdf>).

It should also be noted that higher figures have sometimes been reported: in the United States, one study estimated that 15% of adults who used electronic cigarettes had never smoked a traditional cigarette. See: A. M. Palmer *et al.*, *JAMA Netw. Open* 2021, 4, e214146 (<https://doi.org/10.1001/jamanetworkopen.2021.4146>).

⁵⁹ According to the questionnaire carried out as part of the 2021 French “Baromètre Cancer” survey, electronic cigarettes were used to quit smoking in 48% of cases, to replace tobacco in 21.5% of cases and to reduce tobacco consumption in 16.7% of cases. See: a) R. Touzani *et al.*, “Baromètre Cancer 2021. Attitudes et comportements des Français face au cancer”, 2023 (<https://www.santepubliquefrance.fr/determinants-de-sante/tabac/documents/rapport-synthese/barometre-cancer-2021.-attitudes-et-comportements-des-francais-face-au-cancer>); b) A. Fontaine *et al.*, *Santé Publique* 2017, 29, 793 (<https://doi.org/10.3917/spub.176.0793>).

⁶⁰ Without being able to come to a full conclusion, the French High Council for Public Health stated in 2021 that the scientific evidence tended to suggest that electronic cigarettes played a role in encouraging teenagers to start smoking. See: HCSP, “Avis relatif aux bénéfices-risques de la cigarette électronique”, 2021 (<https://www.hcsp.fr/explore.cgi/avisrapportsdomaine?clefr=1138>).

A recent review conducted for the Australian Department of Health found that there is substantial evidence to support the idea of a “gateway” effect. See: E. Banks *et al.*, “Electronic cigarettes and health outcomes: systematic review of global evidence”, Report for the Australian Department of Health, 2022 (<https://openresearch-repository.anu.edu.au/bitstream/1885/262914/1/Electronic%20cigarettes%20health%20outcomes%20review%202022%20WCAG.pdf>).

⁶¹ a) K. Chatterjee *et al.*, *Int. J. Adolesc. Med. Health* 2016, 30, 20160033 (<https://doi.org/10.1515/ijamh-2016-0033>); b) J. L. Barrington-Trimis *et al.*, *Pediatrics* 2016, 138, e20160379 (<https://doi.org/10.1542/peds.2016-0379>); c) B. A. Primack *et al.*, *JAMA Pediatr.* 2016, 169, 1018 (<https://doi.org/10.1001/jamapediatrics.2015.1742>); d) S. Soneji *et al.*, *JAMA Pediatr.* 2017, 171, 788 (<https://doi.org/10.1001/jamapediatrics.2017.1488>); e) R. Miech *et al.*, *Tob. Control* 2017, 26, e106 (<https://doi.org/10.1136/tobaccocontrol-2016-053291>); f) K. W. Bold *et al.*, *Pediatrics* 2018, 141, e20171832 (<https://doi.org/10.1542/peds.2017-1832>); g) K. M. Berry *et al.*, *JAMA Netw. Open* 2019, 2, e187794 (<https://doi.org/10.1001/jamanetworkopen.2018.7794>); h) R. McMillen *et al.*, *Public Health Rep.* 2019, 134, 528 (<https://doi.org/10.1177/0033354919864369>); i) O. Osibogun *et al.*, *Am. J. Prev. Med.* 2020, 58, 657 (<https://doi.org/10.1016/j.amepre.2020.01.003>); j) E. C. Hair *et al.*, *Addict. Behav.* 2021, 112, 106593 (<https://doi.org/10.1016/j.addbeh.2020.106593>); k) B. Keller-Hamilton *et al.*, *Addict. Behav.* 2021, 114, 106770 (<https://doi.org/10.1016/j.addbeh.2020.106770>); l) D. O'Brien *et al.*, *BMC Public Health* 2021, 21, 954 (<https://doi.org/10.1186/s12889-021-10935-1>).

⁶² a) S. Gautier *et al.*, *Santé Publique* 2017, 29, 333 (<https://doi.org/10.3917/spub.173.0333>); b) J.-F. Etter, *Addiction* 2018, 113, 1776 (<https://doi.org/10.1111/add.13924>); c) A. Glasser *et al.*, *Nicotine Tob Res.* 2019, 21, 1320 (<https://doi.org/10.1093/ntr/nty103>); d) C. P. Mendelsohn, *Int. J. Drug Policy* 2020, 78, 102712 (<https://doi.org/10.1016/j.drugpo.2020.102712>); e) G. C. K. Chan *et al.*, *Addiction* 2021, 116, 743 (<https://doi.org/10.1111/add.15246>); f) J. N. Khouja *et al.*, *Tob. Control.* 2021, 30, 8 (<https://doi.org/10.1136/tobaccocontrol-2019-055433>).

⁶³ The high prevalence of smoking among adolescents in France, which is higher than in the countries where the other studies were conducted, is one of the possible explanations for this difference. See: S. Chyderios *et al.*, *Drug Alcohol Depend.* 2020, 208, 107853 (<https://doi.org/10.1016/j.drugalcdep.2020.107853>).

However, another French study showed that the earlier people started using electronic cigarettes, the higher their risk of switching to smoking. See: S. Legleye *et al.*, *Addiction* 2021, 116, 1521 (<https://doi.org/10.1111/add.15330>).

⁶⁴ a) M. C. Fadus *et al.*, *Drug Alcohol Depend.* 2019, 201, 85 (<https://doi.org/10.1016/j.drugalcdep.2019.04.011>); b) M.-A. Douchet, "Tabagisme et arrêt du tabac en 2022", 2023 (https://www.ofdt.fr/ofdt/fr/tt_23bil.pdf).

Between 2017 and 2022, daily use of electronic cigarettes among 17-year-olds increased from 1.9% to 6.2% (or 4.3 points). Over the same period, daily cigarette smoking among 17-year-olds fell by 9.5 points. Given similar trends in the United States, it has sometimes been suggested that vaping could act as a diversion from smoking. See: a) F. Foxon *et al.*, *Addiction* 2020, 115, 2369 (<https://doi.org/10.1111/add.15099>); b) A. S. Selya *et al.*, *Addiction* 2021, 116, 1848 (<https://doi.org/10.1111/add.15385>); c) N. A. Sokol *et al.*, *Nicotine Tob Res.* 2021, 23, 1958 (<https://doi.org/10.1093/ntr/ntab102>).

However, in France, the French Monitoring Centre for Drugs and Drug Addiction (OFDT) believes that "this data does not allow us to conclude that electronic cigarettes have contributed to the decline in teenage smoking that began more than a decade ago", as this may be linked to other measures that have been put in place. See: OFDT, "Les drogues à 17 ans: une baisse continue des usages de tabac, d'alcool et de cannabis", Press release, 2023 (<http://www.ofdt.fr/BDD/publications/docs/epcxt2d3c.pdf>).

Similarly, the French High Council for Public Health states that the scientific literature does not support the claim that "the use of electronic cigarettes can delay the onset of smoking". See: HCSP, "Avis relatif aux bénéfices-risques de la cigarette électronique", 2021 (<https://www.hcsp.fr/explore.cgi/avisrapportsdomaine?clefr=1138>).

⁶⁵ BVA survey for ACT (Alliance Against Tobacco), "Les adolescents de 13 à 16 ans et les nouveaux produits du tabac", 2022 (<https://alliancecontretabac.org/2022/10/25/1-ado-sur-10-a-deja-utilise-la-puff-lact-reclame-son-interdiction/>).

⁶⁶ a) B. K. Ambrose *et al.*, *JAMA* 2015, 314, 1871 (<https://doi.org/10.1001%2Fjama.2015.13802>); b) J. K. Pepper *et al.*, *Tob. Control* 2016, 25, ii62 (<https://doi.org/10.1136/tobaccocontrol-2016-053174>); c) A. M. Leventhal *et al.*, *Drug Alcohol Depend.* 2019, 203, 99 (<https://doi.org/10.1016%2Fj.drugalcdep.2019.05.020>); d) Truth Initiative, "Flavoured tobacco use among youth and young adult", 2021 (https://truthinitiative.org/sites/default/files/media/files/2021/06/Truth_FlavoredTobacco_FactSheet2021_FINAL.pdf); e) J. D. Sargent *et al.*, *Nicotine Tob. Res.* 2022, 24, 380 (<https://doi.org/10.1093/ntr/ntab172>); f) C. Notley *et al.*, *Addiction* 2022, 117, 1258 (<https://doi.org/10.1111/add.15723>).

With regard to heated tobacco, the sale of flavoured heated tobacco products will be banned across the EU from 23 October 2023. See: Commission Delegated Directive (EU) 2022/2100 of 29 June 2022 amending Directive 2014/40/EU of the European Parliament and of the Council as regards the withdrawal of certain exemptions in respect of heated tobacco products (<https://eur-lex.europa.eu/legal-content/FR/TXT/?uri=CELEX%3A32022L2100&lang1=FR&from=EN&lang3=choose&lang2=choose&csrf=6c99cb45-dd52-48e3-bea7-cc04a56aa72b>).

⁶⁷ a) Kantar for the European Commission, "Attitudes of Europeans towards tobacco and electronic cigarettes", Special Eurobarometer 506, 2021 (<https://webgate.ec.europa.eu/ebsm/api/public/deliverable/download?doc=true&deliverableId=73947>); b) French Agency for Food, Environmental and Occupational Health & Safety, "Étude sur les pratiques de consommation des usagers de cigarettes électroniques en France: appui à la caractérisation des expositions", 2022 (<https://www.anses.fr/fr/system/files/TABAC2020SA0017Ra.pdf>).

⁶⁸ a) A. S. Friedman *et al.*, *JAMA Netw. Open* 2020, 3, e203826 (<https://doi.org/10.1001/jamanetworkopen.2020.3826>); b) L. Li *et al.*, *Nicotine Tob. Res.* 2021, 23, 1490 (<https://doi.org/10.1093/ntr/ntab033>); c) Y. Mok *et al.*, *Nicotine Tob. Res.* 2023, 25, 541 (<https://doi.org/10.1093/ntr/ntac241>).

⁶⁹ J. L. A. Pennings *et al.*, *Tob. Control* 2023, 0, 1 (<https://doi.org/10.1136/tc-2022-057764>).

The risk of some vapers returning to smoking tobacco has also been mentioned. See: Harris Interactive for France Vapotage, "Regard des Français sur les enjeux liés au vapotage", June 2022 (http://harris-interactive.fr/wp-content/uploads/sites/6/2022/06/Rapport_Harris-Regard_des_Francais_sur_les_enjeux_lies_au_vapotage_FranceVapotage.pdf).

⁷⁰ C. J. Cadham *et al.*, *BMC Public Health* 2022, 22, 2128 (<https://doi.org/10.1186/s12889-022-14440-x>).

However, in its 2021 report on smoking, the World Health Organization highlights the case of Finland, which has succeeded in reducing smoking despite strict measures to regulate vaping products (including a ban on flavourings). See: WHO, "WHO report on the global tobacco epidemic, 2021: addressing new and emerging products", 2021 (<https://www.who.int/publications/i/item/9789240032095>).

⁷¹ B. Dautzenberg *et al.*, *Journal of Respiratory Diseases*, 2019, 36, 82 (<https://doi.org/10.1016/j.rmr.2018.10.010>).

⁷² Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR), "Health effects of smokeless tobacco products", 2008 (https://ec.europa.eu/health/archive/ph_risk/committees/04_scenihr/docs/scenihr_o_013.pdf).

⁷³ K. Farsalinos *et al.*, *Ther. Adv. Respir. Dis.* 2018, 12, 1753465817744960 (<https://doi.org/10.1177%2F1753465817744960>).

⁷⁴ a) R. D. Kennedy *et al.*, *Tob. Control* 2017, 26, 440 (<https://doi.org/10.1136/tobaccocontrol-2016-053179>); b) K. E. Warner *et al.*, *Nat. Med.* 2023, 29, 520 (<https://doi.org/10.1038/s41591-022-02201-7>).

⁷⁵ WHO, “WHO report on the global tobacco epidemic, 2023: addressing new and emerging products”, 2023 (<https://www.who.int/publications-detail-redirect/9789240077164>).

⁷⁶ a) Office for Health Improvement and Disparities, “The Khan review: making smoking obsolete”, 2022 (<https://www.gov.uk/government/publications/the-khan-review-making-smoking-obsolete>); b) Department of Health and Social Care and Neil O’Brien, “Smokers urged to swap cigarettes for vapes in world first scheme”, 2023 (<https://www.gov.uk/government/news/smokers-urged-to-swap-cigarettes-for-vapes-in-world-first-scheme>).

⁷⁷ WHO, “WHO report on the global tobacco epidemic, 2021: addressing new and emerging products”, 2021 (<https://www.who.int/publications/i/item/9789240032095>).

⁷⁸ HCSP, “Avis relatif aux bénéfices-risques de la cigarette électronique”, 2016 (<http://www.hcsp.fr/explore.cgi/avisrapportsdomaine?clefr=541>).

⁷⁹ According to Professor Ivan Berlin, who was interviewed for the purpose of this briefing, the 2016 opinion was mainly based on assumptions due to a lack of available data on health effects, whereas the 2022 opinion is based on an in-depth study of the international literature, which explains why the HCSP changed its position.

⁸⁰ Following a self-referral, ANSES is due to publish a report on the assessment of the health risks associated with the use of tobacco and nicotine-based products, particularly vaping products, at the beginning of 2025.

⁸¹ ““Puff”, the new disposable electronic cigarette: a trap for children and adolescents”, Press release from the French National Academy of Medicine, 2023 (<https://www.academie-medecine.fr/la-puff-nouvelle-cigarette-electronique-jetable-un-piege-pour-les-enfants-et-les-adolescents/>).

⁸² At present, compliance with this ban is considered to be low. See: a) CNCT, “Deux tiers des buralistes vendent du tabac aux mineurs en France, un constat accablant”, 2022 (<https://cnct.fr/communiqués/deux-tiers-des-buralistes-vendent-du-tabac-aux-mineurs-en-france-un-constat-accablant/>); b) UFC-Que Choisir, “Cigarettes électroniques: interdites aux mineurs, vraiment?”, 2023 (<https://www.quechoisir.org/actualite-cigarettes-electroniques-puffs-camera-cachee-interdites-aux-mineurs-vraiment-n107898/>).