

Evolution of nicotine product use in Ireland 2015–2023, and associations with quit intentions and attempts: an analysis of nationally representative repeated cross-sectional surveys



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Summary

Background Nicotine product use (NPU; including combustible tobacco products and/or e-cigarettes) is changing rapidly worldwide. Aiming to inform an agile policy response, this study examined NPU trends, and associations with intentions and attempts to quit tobacco.

Methods Survey-weighted prevalences of NPU (tobacco and/or e-cigarette), tobacco, e-cigarette, and dual (tobacco and e-cigarette) use were estimated from 2015 to 2023 (excluding 2020 and 2021) using seven waves of the nationally representative Healthy Ireland survey (combined N = 52,167). Associations between sociodemographic factors and NPU, as well as between NPU and quit intentions and attempts, were examined using survey-weighted regression in the 2015 and 2023 waves.

Findings Between 2015 and 2023, decreases in NPU were non-significant (24.6% (1846/7502) to 22.9% (1688/7356), $p_{\text{trend}} = 0.120$), while tobacco use decreased (22.8% (1713/7502) to 17.7% (1303/7356), $p_{\text{trend}} = 0.012$), e-cigarette use increased (3.1% (230/7502) to 8.4% (614/7356), $p_{\text{trend}} = 0.001$) and dual use increased (1.3% (97/7502) to 3.1% (230/7356), $p_{\text{trend}} = 0.006$). Among those aged 15–24, NPU increased from 19.6% (214/1095) in 2015 to 30.0% (345/1149) in 2023. In 2015, dual use was strongly associated with higher odds of quit intentions and attempts to quit tobacco, compared to tobacco-only, but this was no longer the case in 2023.

Interpretation E-cigarette and dual use have more than doubled in Ireland, while tobacco declines have slowed. The most substantial changes occurred among 15–24-year-olds. Concurrently, the link between dual use and quit intentions and attempts attenuated. These findings underscore the need for stronger e-cigarette regulation and renewed policy efforts to achieve tobacco endgame in Ireland.

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Introduction

Tobacco use remains a leading public health challenge. Between 2000 and 2022, the estimated prevalence of

tobacco use across the World Health Organization (WHO) European region decreased from 34% to 25%, yet this remains the second-highest prevalence glob-

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Research in context

Evidence before this study

We searched PubMed with the search terms: "e-cigarette*" OR "electronic cigarette*" OR "vape" OR "vaping" AND "tobacco" OR "cigarette*" OR "smok*" AND "dual use*" OR "concurrent use" OR "tobacco and e-cigarette" AND "quit*" AND "intention*" OR "attempt*" from database inception to 31st December 2024, for studies published in English. Google Scholar was also used. We identified seven studies on general adult populations: two from the United Kingdom (UK), one from Korea and four from the United States (US). These studies largely reported dual use was associated with increased quit attempts. However, none examined whether these associations have changed over time.

Added value of this study

First, we document pronounced increases in e-cigarette and dual use, while declines in tobacco use stalled from 2019 onwards in Ireland. Consequently, overall nicotine product

use has remained largely stable, but has increased substantially among 15–24-year-olds, particularly since 2021. Second, we identify important changes in the associations between dual use and quit intentions and attempts between 2015 and 2023. By 2023, the strength of the association between dual use, and quit intentions and attempts was substantially attenuated, suggesting that individuals using both tobacco and e-cigarettes were no longer more likely to intend to or to attempt quitting tobacco compared to those using tobacco only.

Implications of all the available evidence

Our findings from Ireland, considered alongside existing evidence, suggest that further population-level measures are necessary to restrict e-cigarette accessibility as consumer products, as they do not appear to support quit intentions or attempts in this context. Furthermore, renewed efforts to advance tobacco endgame are warranted.

ally.¹ Within the region, substantial intercountry variation exists: levels exceed 30% in central and eastern European countries, but are below 18% in the Nordic countries.¹ Advancing tobacco control offers significant potential for global health gains. For instance, full implementation of tobacco control policies is projected to prevent 1.65 million lung cancer cases over a 20-year period across 30 European countries.² As of 2024, 18 countries and two regions covering 43 countries—the European Union (EU, including Ireland) and the Pacific islands—have established tobacco endgame targets, typically aiming to reduce smoking prevalence to below 5%.³

Over the past two decades, the epidemiology of nicotine product use (NPU) has changed. Electronic cigarettes (e-cigarettes) entered the European consumer market in 2006, followed by disposable e-cigarettes between 2019 and 2021.⁴ In 2023, 3% of those aged 15 and older across the EU reported current e-cigarette use.⁵ At the national level, this varies significantly, with 9% reporting current use in Estonia, relative to just 1% in Sweden.⁵ In the United Kingdom (UK), there has been a sharp increase in e-cigarette use across all age groups, especially among young people who had never regularly smoked tobacco before—suggesting that e-cigarette availability as a consumer product may be introducing nicotine to those who might have avoided it otherwise.^{4,6} Long-term vaping (more than six months) has also substantially increased among adults (≥ 18 years old) in England from 1.3% in 2013 to 10.0% in 2023.⁷

Concerns about health risks associated with e-cigarette use are growing. A 2024 meta-analysis of observational studies found that e-cigarette use is associated with elevated risk for cardiovascular, respiratory and oral disease, as well as metabolic dysfunction,

compared to non-use.⁸ Moreover, emerging evidence shows that many who use e-cigarettes continue to smoke combustible cigarettes (dual use). Among e-cigarette users, 39.1% in the US,⁹ 66.7% in Sweden,¹⁰ and 85.3% in Korea were dual users.¹¹ Notably, dual use has been associated with 20–40% higher odds of cardiovascular disease, stroke, metabolic dysfunction, asthma, chronic obstructive pulmonary disease and oral disease compared to smoking tobacco alone.⁸ Emerging evidence also suggests that dual use may increase the risk of developing lung cancer.¹²

The role and impact of e-cigarettes in smoking cessation and initiation remain intensely debated.^{13–16} A 2025 Cochrane review reported high-certainty evidence that nicotine e-cigarettes increase quit rates compared to nicotine replacement therapy (NRT), such as patches or gum, in the context of randomised controlled trials of adults who are usually motivated to quit.¹⁷ However, this contrasts with real-world evidence. For example, a 2021 meta-analysis of observational studies found that when accessed as consumer products, e-cigarette use among adults who smoke was not associated with increased smoking cessation.¹⁸ Other studies suggest that e-cigarette use by adults and youth who intend to quit smoking may actually hinder rather than support cessation.^{19–21} Furthermore, transition from tobacco use only to dual use is a concern.^{22,23} Finally, a systematic review and meta-analysis of longitudinal observational studies found that e-cigarette use substantially increases the likelihood of smoking initiation among adolescents and young adults.²⁴

This evidence base creates a challenge for tobacco policy-makers. While progress has been made in global tobacco control policy, including workplace smoking bans (first implemented nationally in Ireland), and

restrictions on advertising, packaging and point of sale displays,²⁵ rates of tobacco use are declining relatively slowly,¹ and the impact of e-cigarettes remains unclear.¹⁴ Currently, most tobacco control policies do not yet apply to e-cigarettes, and national approaches vary substantially. For example, Public Health England have endorsed e-cigarettes as a harm-reduction method for established smokers,²⁶ whereas, in Ireland, national clinical guidelines for stop smoking care do not recommend e-cigarettes as a cessation support.²⁷ In many countries, e-cigarettes are widely available through general retail outlets. However, in July 2024, Australia implemented a more precautionary policy, restricting e-cigarette sales to pharmacies and solely for the stated purpose of supporting smoking cessation.²⁸ Other countries have taken even more stringent measures, as of 2023, the World Health Organization reported that 34 countries had banned the sale of e-cigarettes altogether.²⁵

In this context, there are several important gaps in the existing evidence base. Internationally, there has been limited longitudinal examination of trends in dual use of tobacco and e-cigarettes. There is insufficient knowledge about how dual use may affect quitting behaviours and whether this may be changing over time. In Ireland, research examining the changing epidemiology of nicotine use among the general adult population is lacking. Existing Irish studies have largely focused on adolescents and e-cigarette use,²⁹ and have been cross-sectional.^{30–34} This study aims to address these gaps, and provide evidence to support future national and international policy efforts.

Our research questions are as follows: i) What are the trends in overall NPU, tobacco use, e-cigarette use and dual use among the general adult population in Ireland between 2015 and 2023? ii) What are the sociodemographic factors cross-sectionally associated with different patterns of NPU in 2015 and 2023, respectively, and has the direction or magnitude of these associations changed over the nine-year period? iii) Do individuals who use tobacco only have different quit intentions or attempts from those who are dual users of tobacco and e-cigarettes? Does this vary by age group, and has the direction or magnitude of these associations changed over the nine-year study period?

Methods

Study design

This study is an analysis of seven waves of a repeated, nationally representative, cross-sectional survey, Healthy Ireland (HI).³⁵ HI uses probability sampling and provides survey weights based on Census population statistics (age by gender, education, work status and region) to adjust for differential non-response, thereby aligning the respondent profile with the source population. As a result, HI can be considered nationally representative of

the population aged 15 years and older in Ireland.³⁵ From 2015 to 2019, the sampling frame included all residential addresses from the Ordnance Survey Ireland Geodirectory and data was collected via Computer Aided Personal Interview.³⁵ From 2021, mobile phone numbers were randomly sampled and data was collected via Computer Aided Telephone Interviewing.³⁵ Ipsos B&A co-ordinates data collection on behalf of the Department of Health of Ireland.³⁵ Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) reporting guidelines were followed.

Participants

The overall study population used in the descriptive analysis of trends includes 52,167 individuals who participated in HI between 2015 and 2023. This excludes the 2020 and 2021 waves, as HI was not conducted in 2020 due to the Covid-19 pandemic, and 2021 lacked variables required for this analysis. Regression analyses were conducted using data from the 2015 and 2023 waves. Analyses examining associations with sociodemographic factors included 7502 participants from the 2015 wave and 7356 from the 2023 wave. Only participants who reported current tobacco use were asked about their intentions and attempts to quit tobacco; consequently, regression analyses examining these outcomes included 1639 participants from the 2015 wave and 1108 from the 2023 wave.

Variables

Nicotine product use

Tobacco use was assessed with the question “Do you smoke tobacco products?”. Participants could respond “Yes, daily”, “Yes, occasionally” or “No” which was dichotomised to “Yes” and “No” for this study. Those who answered “Yes, daily” or “Yes, occasionally” were further asked about their frequency of daily or weekly use, respectively, of specific products, including “Manufactured cigarettes”, “Hand-rolled cigarettes”, “Pipes full of tobacco”, “Cigars” and “Other”. To clarify the distribution of tobacco product use, an additional analysis was conducted, categorising the frequency of use across these product types.

E-cigarette use was assessed with the question “Which of the following statements best applies to you?”. Response options included “I have never tried e-cigarettes”, “I have tried e-cigarettes but do not use them (anymore)”, “I have tried e-cigarettes and still use them daily” and “I have tried e-cigarettes and still use them occasionally”. As with tobacco use, those reporting daily or occasional e-cigarette use were categorised as “Yes”, while all other responses were categorised as “No”. Of note the response options changed slightly for this question during the study period, as detailed in the data dictionary ([Methods S1](#)).

Dual use was defined as reporting tobacco and e-cigarette use at the time of interview. Total NPU was

defined as the use of either tobacco or e-cigarette use. For the regression, analyses focused on those who reported current tobacco use only, current e-cigarette use only and current dual use, to avoid double-counting participants.

Socio-demographics

We selected the following variables a priori. Age (years) was categorised as: 15–24, 25–34, 35–44, 45–54, 55–64, and 65+ for descriptive analyses and the regression examining sociodemographic factors. For regression analyses focused on quit intentions and attempts, age was grouped into broader categories: 15–34, 35–54 and 55+ years due to the smaller sample sizes available for these analyses. Sex was categorised as “Male” or “Female”, which were the only options available in HI 2015–2019. In 2022–2023, participants could also select “Other”, but very few identified this way. Due to HI statistical disclosure rules on minimum cell count frequency, these responses were classified as missing. Ethnicity was categorised as “White Irish” and “Other” due to the small numbers within categories other than “White Irish”. Highest level of education achieved was categorised as “Primary or less”, “Lower secondary”, “Upper secondary”, “Post-secondary non-tertiary” and “Tertiary”. Self-rated health was categorised as “Very good”, “Good”, “Fair” and “Bad/very bad” where “Bad” and “Very bad” were merged due to small numbers.

Quit intentions

Participants who reported current tobacco use were asked about their intentions to quit tobacco which were defined using a Likert scale with the following options: “Not thinking about quitting”, “Thinking about but not planning”, “Planning to quit” or “Trying to quit”.

Quit attempts

Participants who reported current tobacco use were asked about past-year quit attempts, defined as stopping smoking tobacco for one day or longer in an effort to quit. Response options were “No” and “Yes”. Notably, this measure does not capture individuals who had successfully quit smoking, as the question was only asked of those reporting current tobacco use at the time of survey.

For all variables, responses of “Don’t know” or “Refused” were categorised as missing. Further detail on variable categorisation is provided in [Methods S1](#).

Statistical analysis

R version 4.4.3 was used for all statistical analyses.

Survey-weighted prevalence of NPU, tobacco, e-cigarette and dual use was estimated separately for each of seven waves of the Healthy Ireland survey (2015, 2016, 2017, 2018, 2019, 2022 and 2023) overall, and stratified by sex, age group and highest level of education achieved using the R package “survey”. Linear

regression was used to assess the significance ($p < 0.05$) of linear trends in overall prevalence estimates.

Survey-weighted multinomial and binomial logistic regression models were used to examine associations using the R packages “nnet” and “survey”, respectively. First, multinomial regression to assess the relationship between sociodemographic factors and NPU. Second, multinomial regression to assess whether dual use is associated with different quit intentions relative to tobacco-only, and third, binomial regression to examine quit attempts, both overall and stratified by age group to assess for effect modification. These analyses were conducted separately for 2015 and 2023 waves, to evaluate whether the direction and strength of associations had changed. Additionally, we had planned to repeat these analyses using the combined dataset with two-way interactions between year, age and sex, but convergence issues prevented completion.

As an additional analysis to assess consistency with the main results, survey-weighted linear regression was conducted using the R package “survey” to examine the association between dual use (relative to tobacco-only) and quit intentions. Multicollinearity was assessed using variance inflation factors (VIF), with a threshold of ≥ 5 , calculated with the R package “performance”.

Since the proportion of incomplete cases within each wave was minimal (ranging from 0.3 to 1.2%, see [Tables S1 and S2](#)), all analyses were conducted using complete cases only.

Ethics approval

Ethical approval for the Healthy Ireland survey was granted by the Research Ethics Committee at the Royal College of Physicians of Ireland (approval ID number RECSAF 26), encompassing this secondary analysis of fully anonymised data. Informed consent was obtained from each participant before data collection began; for those under 18, parental consent was obtained.

Role of the funding source

No funding was received for this study.

Results

Descriptive statistics

Overall NPU did not decline significantly during the study period, from 24.6% in 2015 to 22.9% in 2023 ($p_{\text{trend}} = 0.120$) ([Fig. 1](#), [Table 1](#) and [Table S3](#)). Increases in NPU were particularly pronounced among those aged 15–24, rising from 19.6% in 2015 to 30.0% by 2023 ([Fig. 1](#) and [Table S4](#)).

Between 2015 and 2023, tobacco use declined significantly overall, from 22.8% to 17.7% ($p_{\text{trend}} = 0.012$) ([Fig. 1](#), [Table 1](#) and [Table S3](#)). Among those who reported tobacco use, the majority smoked manufactured cigarettes, followed by hand-rolled cigarettes. Very few reported smoking pipes or cigars, and

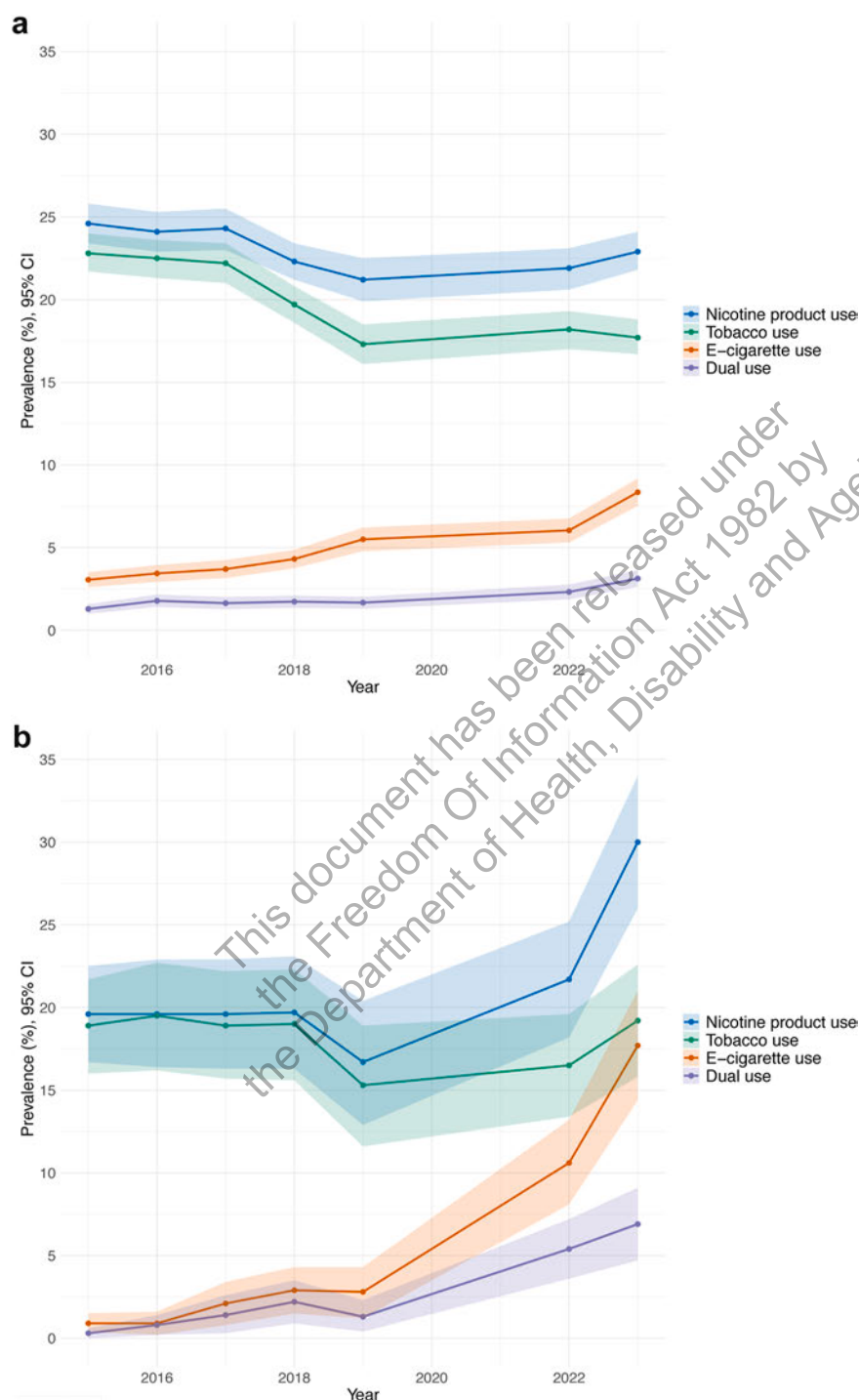


Fig. 1: Trends in survey-weighted prevalence and 95% confidence intervals for nicotine, tobacco, e-cigarette and dual use, 2015–2023 in the overall study population (a) and among those aged 15–24 (b).

almost none reported using other tobacco products (Tables S5 and S6). Declines in tobacco use were more pronounced among females (21.3% in 2015–14.9% in 2023) than males (24.4% in 2015–20.7% in 2023)

(Table S7). When examined by age group, tobacco use remained relatively static among those aged 15–24 (18.9% in 2015 Vs 19.2% in 2023) and those aged 55–64 (18.0% in 2015 Vs 16.9% in 2023). Substantial declines

	2015	2023
	% (N)	
	N = 7502	N = 7356
Nicotine product use (overall)^a		
No	75.4 (5656)	77.1 (5668)
Yes	24.6 (1846)	22.9 (1688)
Tobacco use^a		
No	77.2 (5789)	82.3 (6053)
Yes	22.8 (1713)	17.7 (1303)
E-cigarette use^a		
No	96.9 (7272)	91.6 (6742)
Yes	3.1 (230)	8.4 (614)
Dual use^a		
No	98.7 (7405)	96.9 (7126)
Yes	1.3 (97)	3.1 (230)
Nicotine product use^b		
No	75.4 (5656)	77.1 (5668)
Tobacco use only	21.6 (1616)	14.6 (1073)
E-cigarette use only	1.8 (133)	5.2 (384)
Dual use	1.3 (99)	3.1 (230)
	N = 1639	N = 1108
Quit intentions		
Not thinking about quitting	36.6 (599)	40.7 (451)
Thinking about quitting but not planning	31.3 (513)	26.6 (295)
Actively planning to quit	21.1 (345)	18.8 (208)
Trying to quit	11.1 (182)	13.9 (154)
Quit attempts in past-year		
No	55.5 (910)	55.9 (619)
Yes	44.5 (729)	44.1 (489)

^aParticipants may appear in the "yes" category for more than one of these variables, as they capture current use rather than exclusive use. ^bIn this variable, individuals are only represented once, in a mutually exclusive category.

Table 1: Survey-weighted descriptive statistics for nicotine product use, quit intentions and quit attempts in 2015 and 2023.

occurred among those aged 25–34 (32.4% in 2015–21.9% in 2023) and 35–44 (26.5% in 2015–20.5% in 2023) (Table S8). Across the study period, those with tertiary education consistently reported the lowest tobacco use (16.9% in 2015–13.1% in 2023) (Table S9).

Current e-cigarette use more than doubled, rising from 3.1% in 2015 to 8.4% in 2023, $p_{\text{trend}} = 0.001$ (Fig. 1, Table 1 and Table S3), with minimal sex differences observed (Table S7). E-cigarette use increased across all age groups between 2015 and 2023, with a particularly sharp rise among those aged 15–24, from 0.9% to 17.7% (Table S8).

The prevalence of dual use also more than doubled across the study period, from 1.29% to 3.1%, $p_{\text{trend}} = 0.006$ (Fig. 1, Table S3). There were minimal differences by sex (Table S7). In 2023, the prevalence of dual use was highest among the youngest, and decreased sequentially across age groups: 6.9% among those aged 15–24, 4.2% among those aged 25–34, 3.1% among 35–44, 2.4% among 45–54, 1.6% among 55–64 and 1.1% among those aged 65+ (Table S8).

Lastly, the proportion of individuals who reported "not thinking about quitting" tobacco increased, from 36.6% in 2015 to 40.7% in 2023, however the proportion of respondents who attempted to quit tobacco use in the past-year remained relatively stable, at 44.5% in 2015 and 44.1% in 2023 (Table 1). Sociodemographic characteristics of participants in Healthy Ireland 2015 and 2023 are presented in Table S10.

Associations between sociodemographic factors and NPU in 2015 and 2023

Tobacco use only

Males had higher odds of tobacco use in both years, compared to females, with the association strengthening from 2015 (aOR 1.2, 95% CI 1.03–1.3) to 2023 (aOR 1.5, 95% CI 1.3–1.7). In 2015, individuals of "Other" ethnicity had lower odds of tobacco use (aOR 0.8, 95% CI 0.7–0.98), compared to "White Irish", but this was no longer evident in 2023 (aOR 1.0, 95% CI 0.8–1.2). A clear education gradient was observed in 2015, with progressively higher odds of tobacco use associated with lower levels of attainment, relative to tertiary education. This gradient was less pronounced in 2023, however those with the lowest education level (primary or less) still had the highest odds of tobacco use (aOR 2.8, 95% CI 2.1–3.6). Those who had reported bad or very bad health status had significantly elevated odds of tobacco use (2015: aOR 3.1, 95% CI 2.2–4.5, 2023 aOR 2.4, 95% CI 1.7–3.3) at both time points (Table 2).

E-cigarette use only

In 2015, those aged 15–24 had the lowest odds of e-cigarette use (aOR 0.2, 95% CI 0.1–0.3), but by 2023, they had the highest (aOR 2.1, 95% CI 1.5–2.9), compared to those aged 35–44. Ethnicity was not significantly associated with e-cigarette use in 2015 (aOR 0.7, 95% CI 0.4–1.2), but in 2023, those of "Other" ethnicity had reduced odds (aOR 0.6, 95% CI 0.5–0.8), compared to "White Irish". Lower educational status was associated with higher odds of e-cigarette use in both years, with stronger associations observed in 2023. Unlike tobacco and dual use, e-cigarette use was not associated with sex or bad health status (Table 2).

Dual use

Similar to e-cigarette use, those aged 15–24 had the lowest odds of dual use in 2015 (aOR 0.1, 95% CI 0.02–0.3), but by 2023, they had the highest (aOR 2.4, 95% CI 1.6–3.6), relative to those aged 35–44. Sex was not associated with dual use in 2015 (aOR 0.9, 95% CI 0.6–1.4), but in 2023, males had higher odds than females (aOR 1.3, 95% CI 1.02–1.7). Bad or very bad self-reported health status was strongly associated with elevated odds of dual use in both years (2015: aOR 4.8, 95% CI 1.9–12.2, 2023: aOR 6.8, 95% CI 4.0–11.6) (Table 2).

	2015			2023		
	Tobacco use only Vs No use (ref)	E-cigarette use only Vs No use (ref)	Dual use Vs No use (ref)	Tobacco use only Vs No use (ref)	E-cigarette use only Vs No use (ref)	Dual use Vs No use (ref)
	aOR (95% CI)					
Age						
15–24	0.53 (0.43–0.65)	0.15 (0.07–0.33)	0.08 (0.02–0.29)	0.66 (0.52–0.84)	2.11 (1.54–2.89)	2.42 (1.63–3.59)
25–34	1.47 (1.24–1.74)	0.76 (0.47–1.22)	1.15 (0.68–1.96)	1.21 (0.97–1.50)	1.22 (0.85–1.76)	1.54 (1.00–2.37)
35–44	Ref	Ref	Ref	Ref	Ref	Ref
45–54	0.76 (0.63–0.91)	0.61 (0.37–0.98)	0.54 (0.29–0.98)	0.71 (0.58–0.88)	0.59 (0.41–0.86)	0.60 (0.37–0.97)
55–64	0.37 (0.30–0.46)	0.25 (0.12–0.49)	0.23 (0.11–0.52)	0.56 (0.44–0.71)	0.53 (0.35–0.78)	0.32 (0.18–0.59)
65+	0.17 (0.13–0.22)	0.21 (0.10–0.43)	0.15 (0.06–0.34)	0.27 (0.21–0.35)	0.15 (0.09–0.25)	0.18 (0.09–0.34)
Sex						
Female	Ref	Ref	Ref	Ref	Ref	Ref
Male	1.15 (1.03–1.30)	1.26 (0.89–1.78)	0.94 (0.62–1.41)	1.46 (1.27–1.67)	1.07 (0.86–1.32)	1.33 (1.02–1.74)
Ethnicity						
White Irish	Ref	Ref	Ref	Ref	Ref	Ref
Other	0.82 (0.69–0.98)	0.70 (0.41–1.21)	0.81 (0.45–1.48)	1.01 (0.84–1.21)	0.61 (0.45–0.83)	0.95 (0.68–1.33)
Highest education level						
Tertiary	Ref	Ref	Ref	Ref	Ref	Ref
Post secondary non tertiary	1.84 (1.45–2.34)	1.57 (0.75–3.28)	0.29 (0.06–1.47)	2.34 (1.76–3.11)	2.63 (1.72–4.00)	1.70 (0.97–2.97)
Upper secondary	2.13 (1.82–2.49)	2.60 (1.66–4.08)	1.86 (1.11–3.12)	2.10 (1.76–2.50)	1.74 (1.31–2.30)	1.27 (0.91–1.78)
Lower secondary	2.37 (1.97–2.85)	2.24 (1.29–1.91)	2.36 (1.29–4.31)	2.59 (2.10–3.19)	2.54 (1.82–3.54)	1.67 (1.09–2.55)
Primary or less	3.36 (2.69–4.21)	1.64 (0.75–3.59)	1.87 (0.82–4.27)	2.76 (2.12–3.59)	4.07 (2.69–6.15)	1.75 (0.96–3.18)
Self-rated health status						
Very good	Ref	Ref	Ref	Ref	Ref	Ref
Good	1.59 (1.40–1.81)	1.33 (0.92–1.93)	1.19 (0.74–1.91)	1.29 (1.10–1.52)	1.51 (1.17–1.93)	1.55 (1.12–2.14)
Fair	2.43 (2.02–2.92)	1.06 (0.55–2.06)	3.11 (1.73–5.59)	2.11 (1.73–2.58)	2.26 (1.65–3.10)	2.95 (1.96–4.43)
Bad/very bad	3.13 (2.20–4.46)	0.69 (0.12–3.94)	4.76 (1.86–12.20)	2.37 (1.70–3.32)	1.63 (0.89–2.99)	6.82 (4.00–11.60)

N = number of participants included in the analysis, Ref = reference category, Vs = versus, aOR = adjusted odds ratio, CI = confidence interval. *Both models were adjusted for all variables listed within the table.

Table 2: Associations between sociodemographic factors and nicotine product use among the Healthy Ireland study populations from 2015 (N = 7502) and 2023 (N = 7356), estimated with survey-weighted multivariable multinomial logistic regression models.

Associations between dual use and quit intentions in 2015 and 2023

In 2015, dual use was strongly associated with higher odds of quit intentions, with effect estimates increasing progressively with greater seriousness of quit intentions, relative to those who used tobacco only. By 2023, however, this strong positive association had diminished across most levels of quit intentions. When stratified by age, no significant differences in quit intentions were observed between age groups in either 2015 or 2023, suggesting that age does not modify the relationship. However, in 2023, effect estimates for quit intentions were elevated among dual users aged 55 and older, though this finding did not reach statistical significance (Table 3). This analysis was repeated using linear regression (Table S11), and yielded consistent results.

Associations between dual use and quit attempts in 2015 and 2023

In 2015, dual use was strongly associated with increased odds of having attempted to quit tobacco in the past-year compared to tobacco-only users (aOR 3.3,

95% CI 2.0–5.4). When stratified by age group, dual use was consistently associated with past-year quit attempts across all groups, with the strongest effect observed among those aged 55 and older (aOR 7.0, 95% CI 2.6–18.4). By 2023, this association was no longer apparent overall (aOR 1.2, 95% CI 0.8–1.7), or within any specific age group (Table 4).

These analyses examining quit intentions and quit attempts were repeated using a more granular age categorisation (15–24, 25–34, 35–44, 45–54 and 55+). Due to small sample size, some estimates were unstable and most had wide confidence intervals including the null, suggesting insufficient power (Tables S12 and S13). Despite this, the overall pattern was consistent with the original analyses (Tables 3 and 4): in 2015, dual use was associated with elevated odds of quit intentions and attempts but by 2023, these effects were substantially attenuated (Tables S12 and S13).

Discussion

Ireland has set a tobacco endgame goal of reducing smoking prevalence to less than 5%.³⁶ It has not actively

2015			2023			
	Thinking about quitting but not planning Vs not thinking about quitting (ref)	Actively planning to quit Vs not thinking about quitting (ref)	Trying to quit Vs not thinking about quitting (ref)	Thinking about quitting but not planning Vs not thinking about quitting (ref)	Actively planning to quit Vs not thinking about quitting (ref)	Trying to quit Vs not thinking about quitting (ref)
aOR (95% CI)						
Overall	N = 1639			N = 1108		
Tobacco only	Ref	Ref	Ref	Ref	Ref	Ref
Dual use	1.61 (0.78–3.31)	3.59 (1.81–7.11)	9.24 (4.71–18.1)	0.93 (0.61–1.42)	1.12 (0.72–1.76)	1.72 (1.08–2.75)
Age: 15–34	N = 553			N = 307		
Tobacco only	Ref	Ref	Ref	Ref	Ref	Ref
Dual use	1.78 (0.43–7.38)	4.57 (1.24–16.8)	10.5 (2.81–39.5)	0.81 (0.39–1.67)	1.49 (0.74–3.00)	1.96 (0.95–4.05)
Age: 35–54	N = 658			N = 468		
Tobacco only	Ref	Ref	Ref	Ref	Ref	Ref
Dual use	1.24 (0.46–3.31)	2.92 (1.15–7.41)	4.99 (1.85–13.5)	0.84 (0.43–1.66)	0.89 (0.43–1.87)	0.96 (0.42–2.19)
Age: 55+	N = 428			N = 333		
Tobacco only	Ref	Ref	Ref	Ref	Ref	Ref
Dual use	2.07 (0.38–11.10)	4.14 (0.62–27.5)	53.3 (11.6–244.0)	1.49 (0.62–3.62)	1.39 (0.42–4.62)	1.84 (0.58–5.85)

Vs – versus, Ref – reference category, aOR – adjusted odds ratio, CI – confidence interval, N – number of participants included in the analysis. ^aThis question was only asked of those who reported current tobacco use therefore those who only reported e-cigarette use or no use are not included in these analyses. ^bAll models were adjusted for sex, ethnicity, highest education level and health status. Models in the overall study populations were also adjusted for age.

Table 3: Quit intentions^a among those who dual use relative to those who use tobacco only, overall and stratified by age-group, in 2015 and 2023 estimated using survey-weighted multinomial regression.^b

promoted e-cigarettes as a smoking cessation aid and restrictions on e-cigarette sales to minors were only enacted in 2023.³⁷ Within this context, we identified two major findings of interest. Firstly, while tobacco use declined between 2015 and 2023 (22.8% to 17.7%), reductions largely stalled from 2019 to 2023 (17.3% to 17.7%). Concurrently, e-cigarette use has increased almost three-fold (3.0% to 8.4%), with an especially

pronounced increase of almost 20-fold (0.9% to 17.7%) among those aged 15–24 years, arising largely in the period post 2019. Similarly, dual use increased overall, with a more than 20-fold (0.3% to 6.9%) rise among those aged 15–24 years.

Internationally, similar trends have been observed. A surge in e-cigarette use was reported in England following the introduction of disposable e-cigarettes, aligning with the substantial increases we document from 2022 onwards.⁴ In the USA, declines in current cigarette smoking among youth (ages 11–18) slowed following the introduction of e-cigarettes,³⁸ mirroring the plateau in tobacco use prevalence we describe among adults in this study. Most recently, evidence from adolescents aged 14–15 in New Zealand shows rapid increases in ever-, regular- and daily-e-cigarette use, alongside a significant slowing in the decline of ever- and regular-tobacco smoking.³⁹

While not the focus of this manuscript, the COVID-19 pandemic occurred during the study period and may have influenced the nicotine product use trends we describe. Like many countries, Ireland experienced major disruptions to healthcare during this time, and a decline in the use of smoking cessation services was observed in 2020 and 2021.³⁶ The pandemic also affected the administration of the Healthy Ireland survey.³⁵ However, since then, both the utilisation and funding of smoking cessation services have increased substantially.⁴⁰ Internationally, evidence on the impact of COVID-19 on nicotine use is mixed, with some studies reporting increased use and others showing declines.⁴¹

2015		2023
aOR (95% CI)		
Overall	N = 1639	N = 1108
Tobacco only	Ref	Ref
Dual use	3.25 (1.96–5.39)	1.19 (0.82–1.74)
Age: 15–34	N = 553	N = 307
Tobacco only	Ref	Ref
Dual use	4.59 (1.54–13.7)	1.16 (0.66–2.06)
Age: 35–54	N = 658	N = 468
Tobacco only	Ref	Ref
Dual use	2.42 (1.22–4.82)	1.62 (0.85–3.12)
Age: 55+	N = 428	N = 333
Tobacco only	Ref	Ref
Dual use	6.98 (2.64–18.4)	0.72 (0.32–1.62)

Vs – versus, aOR – adjusted odds ratio, CI – confidence interval, N – number of participants included in the analysis, Ref – reference category. ^aThis question was only asked of those who reported current tobacco use therefore those who only reported e-cigarette use or no use are not included in these analyses. ^bModels all adjusted for sex, ethnicity, highest education level and health status, models in overall study population additionally adjusted for age.

Table 4: Past-year quit attempts^a among those who dual use relative to those who use tobacco only, overall and stratified by age-group in 2015 and 2023, estimated using survey-weighted logistic regression.^b

Secondly, we document a substantial and important change in the association between dual use, and quit intentions and attempts over time. In 2015, dual use was strongly associated with both quit intentions and attempts, but this was no longer the case in 2023. Our 2015 results align with findings from several existing studies, including two UK studies using data from 2012 to 2013 and 2015–2018,^{42,43} respectively, a 2018 Korean survey,⁴⁴ and multiple US studies using data gathered between 2012 and 2016.^{45–48} To our knowledge, no prior studies have reported findings consistent with our 2023 results or documented a similar shift in such associations with quit intentions or attempts over time. These findings contribute to a growing evidence base suggesting that e-cigarette availability as a consumer product is not associated with increased smoking cessation.^{18–21,49}

The plateau in tobacco use prevalence among adults, alongside the rapid rise in e-cigarette and dual use, has stalled declines in overall nicotine use and led to a sharp increase among those aged 15–24. These trends pose a significant public health concern. E-cigarettes have been a disruptive development in tobacco control and most policy-makers are struggling to find an approach which balances “promise and peril” in the context of uncertainty and scientific debate.¹³ On one hand, guided by a harm minimisation principle,¹⁶ countries like the UK and New Zealand have been keen to leverage the potential demonstrated in some trials for e-cigarettes to support quitting,¹⁷ albeit the translation of these effects in self-supported quit attempts have been more uncertain.¹⁸ Ireland and other countries have taken a more precautionary approach, underpinned by an accumulating volume of evidence linking e-cigarette use among young people with subsequent smoking.²⁴ Meanwhile, some countries, such as Brazil, have banned the sale of e-cigarettes completely.²⁵

Analyses, like this study, of repeated population-level cross-sectional studies make an important contribution of real-world evidence for tobacco policy and practice,⁵⁰ albeit inferences need to be drawn with care. The rapid increase in e-cigarette use in a context of stalling smoking prevalence and increasing dual use, especially among younger age groups, does not suggest that the diffusion of e-cigarettes into the market in Ireland and their subsequent uptake is leading to displacement or reduction in tobacco use that could chart a path to tobacco endgame. This is supported by the novel finding in this study of the marked attenuation in the quitting intention and behaviour of dual users across the study period.

Given the explicit goal of protecting children stated in Ireland’s tobacco policy, a principle shared with other countries, our study supports recent Irish legislation that restrict e-cigarette retail to people under 18 years, license tobacco and e-cigarette retailers,³⁷ and the 2024

enactment by the Irish government of the first law across the EU to restrict tobacco product retail to people under 21 years (“Tobacco 21”).⁵¹ Although we were unable to examine e-cigarette product type in this study, disposable e-cigarettes may be a key driver of the recent increase in e-cigarette use in Ireland, as in other countries.⁴ Ireland is joining other countries with legislative plans to ban disposable e-cigarettes, and is also planning restrictions on promotion, packaging and flavours.⁵² However, the trends we highlight raise questions about the effectiveness of a piecemeal approach to nicotine product policy in Ireland and provide a mandate for the full implementation of existing policies, as well as more comprehensive, coherent and decisive action. This will need to include a review of public health communication with people who smoke about the use of e-cigarettes as a support to stop smoking and a careful examination of Australia’s legislation restricting e-cigarette sales to pharmacies.²⁸

Our study also highlights the importance of enhanced population health surveillance to support implementation of tobacco endgame, including longitudinal studies, to inform decisions and to evaluate real-world policy impact, including the distributional effects across population groups. While heated tobacco products (HTPs) use in Ireland is lower than other EU countries,⁵ absence of this nicotine product in the Healthy Ireland surveys used in this study must be addressed to future-proof surveillance.

This study has a number of strengths. First, our study population was large and second, is considered nationally representative, meaning results can be generalised to the entire adult population in Ireland. Third, we described trends in the survey-weighted prevalence of NPU, tobacco use, e-cigarette use and dual use across seven waves of data collected over nine years. Additionally, we used two waves, the first and last from the study period, to assess whether associations between sociodemographic factors, quit intentions, quit attempts and NPU, had changed over time.

However, we must also acknowledge some limitations. First, there were slight changes in the wording of some questions between waves. Decisions on measure harmonisation were made through consensus discussions within the research team and are detailed in our data dictionary. Second, changes in sampling and data collection between waves may have introduced mode effects that could impact our prevalence estimates. Third, given cross-sectionality, we describe associations but cannot infer directionality, and as with any observational study, residual confounding remains possible. Fourth, as only those who reported current tobacco use were asked about past-year quit attempts, this outcome does not capture individuals who successfully quit smoking. Fifth, we had planned to repeat our models with interaction terms between year, age, and sex in the

combined dataset as supplementary analyses. However, convergence issues arose, likely due to the relatively small number of individuals reporting e-cigarette use only or dual use, limiting power to estimate interaction effects. Sixth, we did not have access to measures of nicotine dependence or type of e-cigarette product used which may have different effects on behaviour due to marketing and nicotine concentration. Lastly, the use of self-reported data may have introduced measurement error.

Conclusion

This study documents stalling reductions in overall nicotine and tobacco use, alongside a rise in e-cigarette and dual use over a nine-year period among adults in Ireland. Of particular concern are trends among the youngest age group (15–24 years), where nicotine consumption has risen substantially, particularly since 2022. We also describe important changes in the associations between dual use, and quit intentions and attempts, indicating that dual use is no longer linked to efforts to quit tobacco. Overall, these trends threaten progress toward achieving a tobacco-free Ireland. In line with the precautionary principle and evolving evidence, further population-level policies to reduce e-cigarette use—particularly among young people—should be urgently advanced in Ireland in the context of a renewed tobacco endgame plan.

Contributors

PK: Conceptualization, Methodology, Supervision, Writing—review and editing. MMB: Conceptualization, Methodology, Formal analysis, Writing—original draft. AKB: Conceptualization, Writing—original draft. AS: Data Curation, Writing—review and editing. FD: Methodology, Writing—review and editing. FB: Methodology, Writing—review and editing. PK, MMB, AKB and AS accessed and verified the data and all authors were responsible for the decision to submit the manuscript.

Data sharing statement

We cannot share the data analysed in this study directly. However, we have provided a data dictionary detailing each of our variables in [Supplementary files](#). Researchers wishing to access the data directly can make an application to the Irish Social Science Data Archive for access to the Anonymised Microdata File (more information here: <https://www.ucd.ie/issda/data/healthyireland/>) or to the Department of Health for access to the Researcher Microdata File (more information here: <https://www.gov.ie/en/collection/231c02-healthy-ireland-survey-wave/>).

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work, one of the first authors (MMB) used OpenAI's ChatGPT (version GPT-4o) to enhance readability and language. MMB reviewed and edited all AI-assisted text as needed and takes full responsibility for the content of the publication.

Declaration of interests

FD has received research funding from the Health Services Executive to explore tobacco use. FD has received research funding from the Health Research Board to explore tobacco use. PK is a Member of the Organising Committee for 9th European Conference on Tobacco or Health 2023 and was supported with travel, accommodation and registration fee for this conference by the organisers incl European

Cancer Leagues. PK is a Council Member, Action on Smoking and Health (ASH), Ireland (unpaid). PK is a Member, Tobacco Policy Advisory Group, Royal College of Physicians in Ireland (unpaid). All other authors (MMB, AKB, FB and AS) declare no competing interests.

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Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.lanepe.2025.101352>.

References

- 1 World Health Organization (WHO). *WHO global report on trends in prevalence of tobacco use 2000–2030*. Geneva: World Health Organization; 2024.
- 2 Gredner T, Mons U, Niedermaier T, Brenner H, Soerjomataram I. Impact of tobacco control policies implementation on future lung cancer incidence in Europe: an international, population-based modeling study. *Lancet Reg Health Eur*. 2021;4:100074. <https://doi.org/10.1016/j.lanepe.2021.100074>.
- 3 Tamil Selvan S, Yeo XX, van der Eijk Y. Which countries are ready for a tobacco endgame? A scoping review and cluster analysis. *Lancet Glob Health*. 2024;12(6):e1049–e1058. [https://doi.org/10.1016/S2214-109X\(24\)00085-8](https://doi.org/10.1016/S2214-109X(24)00085-8).
- 4 Tattan-Birch H, Brown J, Shahab L, Beard E, Jackson SE. Trends in vaping and smoking following the rise of disposable e-cigarettes: a repeat cross-sectional study in England between 2016 and 2023. *Lancet Reg Health Eur*. 2024;42:100924. <https://doi.org/10.1016/j.lanepe.2024.100924>.
- 5 European Commission. Attitudes of Europeans towards tobacco and related products. Available from: <https://europa.eu/eurobarometer/surveys/detail/2995>; 2023. Accessed March 6, 2025.
- 6 Jackson SE, Shahab L, Tattan-Birch H, Brown J. Vaping among adults in England who have never regularly smoked: a population-based study, 2016–24. *Lancet Public Health*. 2024;9(10):e755–e765. [https://doi.org/10.1016/S2468-2667\(24\)00183-X](https://doi.org/10.1016/S2468-2667(24)00183-X).
- 7 Jackson SE, Tattan-Birch H, Shahab L, Brown J. Trends in long term vaping among adults in England, 2013–23: population based study. *BMJ*. 2024;386:e079016. <https://doi.org/10.1136/bmj-2023-079016>.
- 8 Glantz SA, Nguyen N, Oliveira da Silva AL. Population-based disease odds for e-cigarettes and dual use versus cigarettes. *NEJM Evid*. 2024;3(3):EVID0a2300229. <https://doi.org/10.1056/EVID0a2300229>.
- 9 Mayer M, Reyes-Guzman C, Grana R, Choi K, Freedman ND. Demographic characteristics, cigarette smoking, and e-cigarette use among US adults. *JAMA Netw Open*. 2020;3(10):e2020694. <https://doi.org/10.1001/jamanetworkopen.2020.20694>.
- 10 Hedman L, Backman H, Stridsman C, et al. Association of electronic cigarette use with smoking habits, demographic factors, and respiratory symptoms. *JAMA Netw Open*. 2018;1(3):e180789. <https://doi.org/10.1001/jamanetworkopen.2018.0789>.
- 11 Kim CY, Paek YJ, Seo HG, et al. Dual use of electronic and conventional cigarettes is associated with higher cardiovascular risk factors in Korean men. *Sci Rep*. 2020;10(1):5612. <https://doi.org/10.1038/s41598-020-62545-3>.
- 12 Bittoni M, Carbone D, Harris R. Vaping, smoking and lung cancer risk. *J Oncol Res Ther*. 2024;9(3):10229. <https://doi.org/10.29011/2574-710x.10229>.
- 13 Abrams D. Promise and peril of e-cigarettes: can disruptive technology make cigarettes obsolete? *JAMA*. 2014;311(2):135–136. <https://doi.org/10.1001/jama.2013.285347>.

- 14 Feeney S, Rossetti V, Terrien J. E-cigarettes—a review of the evidence—harm versus harm reduction. *Tob Use Insights*. 2022;15:1179173X221087524. <https://doi.org/10.1177/1179173X221087524>.
- 15 Glantz SA, Bareham DW. E-cigarettes: use, effects on smoking, risks, and policy implications. *Annu Rev Public Health*. 2018;39:215–235. <https://doi.org/10.1146/annurev-publhealth-040617-013757>.
- 16 Abrams DB, Glasser AM, Pearson JL, Villanti AC, Collins LK, Niaura RS. Harm minimization and tobacco control: reframing societal views of nicotine use to rapidly save lives. *Annu Rev Public Health*. 2018;39:193–213. <https://doi.org/10.1146/annurev-publhealth-040617-013849>.
- 17 Lindson N, Butler AR, McRobbie H, et al. Electronic cigarettes for smoking cessation. *Cochrane Database Syst Rev*. 2025; (1):CD010216. <https://doi.org/10.1002/14651858.CD010216.pub9>. Accessed March 8, 2025.
- 18 Wang RJ, Bhadriraju S, Glantz SA. E-cigarette use and adult cigarette smoking cessation: a meta-analysis. *Am J Public Health*. 2021;111(2):230–246. <https://doi.org/10.2105/AJPH.2020.305999>.
- 19 Osibogun O, Bursac Z, Maziak W. Longitudinal transition outcomes among adult dual users of e-cigarettes and cigarettes with the intention to quit in the United States: PATH Study (2013–2018). *Prev Med Rep*. 2022;26:101750. <https://doi.org/10.1016/j.pmedr.2022.101750>.
- 20 Glantz SA. E-cigarettes used by adolescents to try to quit smoking are associated with less quitting: a cross-sectional analysis of the national youth tobacco survey. *J Adolesc Health*. 2023;72(3):359–364. <https://doi.org/10.1016/j.jadohealth.2022.10.011>.
- 21 Chen R, Pierce JP, Leas EC, et al. Effectiveness of e-cigarettes as aids for smoking cessation: evidence from the PATH Study cohort, 2017–2019. *Tob Control*. 2023;32:e145–e152. <https://doi.org/10.1136/tobaccocontrol-2021-056901>.
- 22 Carpenter MJ, Wahlquist AE, Dahne J, et al. Effect of unguided e-cigarette provision on uptake, use, and smoking cessation among adults who smoke in the USA: a naturalistic, randomised, controlled clinical trial. *eClinicalMedicine*. 2023;63:102142. <https://doi.org/10.1016/j.eclinm.2023.102142>.
- 23 Hanewinkel R, Glantz SA. Clinical trial shows that giving smokers free e-cigarettes creates more dual users than switchers or quitters. *eClinicalMedicine*. 2024;68:102452. <https://doi.org/10.1016/j.eclinm.2024.102452>.
- 24 O'Brien D, Long J, Quigley J, Lee C, McCarthy A, Kavanagh P. Association between electronic cigarette use and tobacco cigarette smoking initiation in adolescents: a systematic review and meta-analysis. *BMC Public Health*. 2021;21(1):954. <https://doi.org/10.1186/s12889-021-10935-1>.
- 25 World Health Organization. WHO report on the global tobacco epidemic, 2023: protect people from tobacco smoke. Available from: <https://www.who.int/publications/i/item/9789240077164>; 2023. Accessed April 6, 2025.
- 26 Britton J, Bogdanovica I. *Electronic cigarettes a report commissioned by public health England*. Public Heal Engl; 2014:1–30. Available from: www.gov.uk/government/uploads/system/uploads/attachment_data/file/311887/E-cigarettes-report.pdf. Accessed August 21, 2024.
- 27 Department of Health. Stop smoking. National Clinical Guideline No. 28. Available from: <https://www.gov.ie/en/collection/c9fa9a-national-clinical-guidelines/>; 2022. Accessed September 11, 2024.
- 28 Australian Government Department of Health and Aged Care. Changes to vaping in Australia from 1 October 2024. Available from: <https://www.health.gov.au/sites/default/files/2024-09/changes-to-vaping-in-australia-from-1-october-2024-fact-sheet-for-parents-and-carers.pdf>. Accessed November 15, 2024.
- 29 Hanafin J, Sunday S, Clancy L. Friends and family matter most: a trend analysis of increasing e-cigarette use among Irish teenagers and socio-demographic, personal, peer and familial associations. *BMC Public Health*. 2021;21(1):1988. <https://doi.org/10.1186/s12889-021-12113-9>.
- 30 Hanafin J, Sunday S, Clancy L. Sociodemographic, personal, peer, and familial predictors of e-cigarette ever use in ESPAD Ireland: a forward stepwise logistic regression model. *Tob Induc Dis*. 2021;20 (February):12. <https://doi.org/10.18332/tid/144234>.
- 31 Sunday S, Clancy L, Hanafin J. The associations of parental smoking, quitting and habits with teenager e-cigarette, smoking, alcohol and other drug use in GUI Cohort '98. *Sci Rep*. 2023;13 (1):1–11. <https://doi.org/10.1038/s41598-023-47061-4>.
- 32 Bowe AK, Doyle F, Stanistreet D, et al. E-cigarette-only and dual use among adolescents in Ireland: emerging behaviours with different risk profiles. *Int J Environ Res Public Health*. 2021;18 (1):332. <https://doi.org/10.3390/ijerph18010332>.
- 33 Babineau K, Taylor K, Clancy L. Electronic cigarette use among Irish youth: a cross sectional study of prevalence and associated factors. *PLoS One*. 2015;10(5):e0126419. <https://doi.org/10.1371/journal.pone.0126419>.
- 34 Hanafin J, Sunday S, Clancy L. E-cigarettes and smoking in Irish teens: a logistic regression analysis of current (past 30-day) use of e-cigarettes. *J Public Health*. 2023;31(6):955–966.
- 35 Ipsos B&A. Healthy Ireland survey 2023: summary report. Available from: <https://www.gov.ie/pdf/?file=https://assets.gov.ie/283794/3ef96218-68fb-4fa3-a0d2-ec687071db38.pdf#page=null>; 2023. Accessed August 8, 2024.
- 36 HSE Tobacco Free Ireland Programme. The state of tobacco control in Ireland, Second Report. Available from: <https://www.hse.ie/eng/about/who/tobaccocontrol/state-of-tobacco-control-report-2022.pdf>; 2022. Accessed April 6, 2025.
- 37 Government of Ireland. Public health (tobacco products and nicotine inhaling products) act. Available from: <https://www.irishstatutebook.ie/eli/2023/act/35/enacted/>; 2023. Accessed December 16, 2024.
- 38 Creamer MR, Dutra LM, Sharapova SR, et al. Effects of e-cigarette use on cigarette smoking among US youth, 2004–2018. *Prev Med*. 2021;142:106316. <https://doi.org/10.1016/j.ypmed.2020.106316>.
- 39 Egger S, David M, McCool J, et al. Trends in smoking prevalence among 14–15-year-old adolescents before and after the emergence of vaping in New Zealand: an interrupted time series analysis of repeated cross-sectional data, 1999–2023. *Lancet Reg Health West Pac*. 2025;56:101522.
- 40 HSE Health and Wellbeing. Stop smoking services - free stop smoking medications. Available from: <https://hsehealthandwellbeingnews.com/stop-smoking-services-free-stop-smoking-medications/>; 2024. Accessed April 6, 2025.
- 41 Barrington-Trimmis JL, Klemperer EM, Majmundar A, Harrell M. The impact of the COVID-19 pandemic on nicotine use: what have we learned? *Nicotine Tob Res*. 2023;25(2):175–176. <https://doi.org/10.1093/ntr/ntac265>.
- 42 Brose LS, Hitchman SC, Brown J, West R, McNeill A. Is the use of electronic cigarettes while smoking associated with smoking cessation attempts, cessation and reduced cigarette consumption? A survey with a 1-year follow-up. *Addiction*. 2015;110(7):1160–1168. <https://doi.org/10.1111/add.12917>.
- 43 Jackson SE, Shahab L, West R, Brown J. Associations between dual use of e-cigarettes and smoking cessation: a prospective study of smokers in England. *Addict Behav*. 2020;103:106230. <https://doi.org/10.1016/j.addbeh.2019.106230>.
- 44 Kim J, Lee S, Kimm H, Lee JA, Lee CM, Cho HJ. Heated tobacco product use and its relationship to quitting combustible cigarettes in Korean adults. *PLoS One*. 2021;16(5):e0251243. <https://doi.org/10.1371/journal.pone.0251243>.
- 45 Zhu SH, Zhuang YL, Wong S, Cummins SE, Tedeschi GJ. E-cigarette use and associated changes in population smoking cessation: evidence from US current population surveys. *BMJ*. 2017;358:1–8.
- 46 Johnson L, Ma Y, Fisher SL, et al. E-cigarette usage is associated with increased past-12-month quit attempts and successful smoking cessation in two US population-based surveys. *Nicotine Tob Res*. 2019;21(10):1331–1338. <https://doi.org/10.1093/ntr/nty211>.
- 47 Zhuang YL, Cummins SE, Sun JY, Zhu SH. Long-term e-cigarette use and smoking cessation: a longitudinal study with US population. *Tob Control*. 2016;25(Suppl 1):i90–i95. <https://doi.org/10.1136/tobaccocontrol-2016-053096>.
- 48 Brown-Johnson CG, Popova L. Exploring smoking stigma, alternative tobacco product use, & quit attempts. *Health Behav Policy Rev*. 2016;3(1):13–20. <https://doi.org/10.14485/HBPR.3.1.2>.
- 49 Quach NE, Pierce JP, Chen J, et al. Daily or nondaily vaping and smoking cessation among smokers. *JAMA Netw Open*. 2025;8(3):e250089. <https://doi.org/10.1001/jamanetworkopen.2025.0089>.
- 50 Hefler M, Bianco E, Bradbrook S, Arnold D, Dorotheo EU. What facilitates policy audacity in tobacco control? An analysis of approaches and supportive factors for innovation in seven countries. *Tob Control*. 2022;31 (2):328–334. <https://doi.org/10.1136/tobaccocontrol-2021-056570>.
- 51 Government of Ireland. *Public health (tobacco) (amendment) act*; 2024. Available from: <https://www.irishstatutebook.ie/eli/2024/act/47/enacted/en/html#:~:text=An%20Act%20to%20prohibit%20the,to%20provide%20for%20related%20matters.> Accessed December 10, 2024.
- 52 Department of Health. Minister for Health secures Government approval to introduce greater restrictions on vapes. Available from: <https://www.gov.ie/en/press-release/69e19-minister-for-health-secures-government-approval-to-introduce-greater-restrictions-on-vapes/>; 2024. Accessed January 2, 2025.

s47E(c), s47F

From: BROWN, Karlie
Sent: Monday, 7 July 2025 8:20 AM
To: s47F
Subject: Roy Morgan analysis [SEC=OFFICIAL]

Hi s47F – Daily Tele article below, as discussed.

Thanks,
 Karlie

Vape crackdown fail as more yo

Rory Williams

Shocking smoking statistics which show young people are lighting up cigarettes in growing numbers ever since a crackdown on vapes was introduced has ignited renewed criticism of the federal government's attempts to curb e-cigarette use.

Recent data revealed more than one-in-10 of 18 to 24 year olds are smoking cigarettes, a 36 per cent spike in less than a year. The figures come despite Health Minister Mark Butler

the back" when young people are smoking and vaping more than they were before the ban came into effect.

"These statistics are an absolute indictment on the Albanese government, which has blatantly lied to Australians by saying that their vaping reforms are working," she said.

"Not only has the government failed to crack down on this serious issue, but it has only become worse under their failed approach

harms of illicit tobacco products."

The latest research from Morgan shows that smoking among young people has risen sharply since the ban on flavored e-cigarettes began in July 2022.

At the same time, the number of people who increased their use of tobacco-made cigarettes began vaping more than doubled, climbing from 19 per cent in 2022 to 36 per cent in 2024.

There was also a significant increase in the use of