



# A comprehensive evaluation of an **e-cigarette flavor ban** on consumer behavior and purchasing

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## Background

The appeal of e-cigarettes is concerning as vaping is harmful to health. Flavored e-cigarettes are particularly appealing, especially to youth. To protect youth, the Dutch government implemented a ban on flavored e-cigarettes, limiting products to tobacco flavors and unflavored options only. This study assesses the impact of the flavor ban on e-cigarette use, aiming to inform policy makers about the effectiveness of such regulations.

## Methods

In September 2024, nine months following the ban's implementation, we conducted a retrospective cross-sectional survey. Participants included 548 adolescents and young adults (ages 13-24) and 457 adults (25+ years), all of whom used e-cigarettes at least monthly prior to the ban. We measured product use pre-ban (retrospectively) and post-ban (currently), as well as changes in product use self-attributed to the ban.

## Results

**E-cigarette use** decreased due to the ban

- 39.5% vape less (incl. quitting)
- 32.8% attempted to quit
- 22.4% quit vaping
- No difference between the age groups

Overall vaping prevalence from pre to post ban declined, see figure 1.

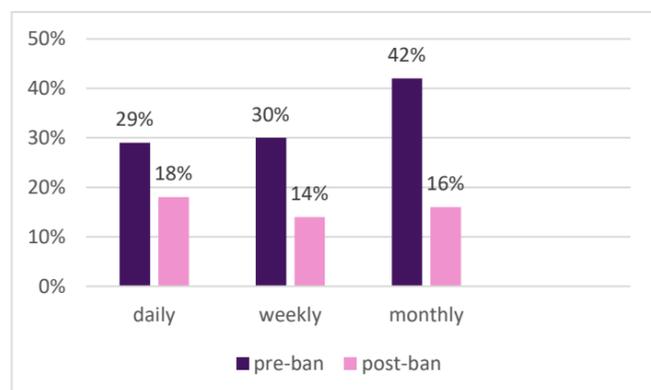


Figure 1. Overall vaping prevalence

There was no shift toward **tobacco flavors**. The use of **flavorless e-cigarettes** increased among younger users (1.9% to 3.7%)

The use of **now-banned flavors** declined (91.4% to 47.0%)

- The largest group (35.6%) purchased them abroad, see Table 1.

Table 1. Places of purchasing now-banned e-liquid flavours

Place of purchase	AYA (13 – 24 years; N = 281)	Adults (25+ years; N= 191)	Whole population (N = 472)
<b>Physical shop abroad</b>	30.2%	43.5%	35.6%
Germany	15.4%	22.9%	18.7%
Belgium	9.3%	15.4%	11.8%
Other	9.7%	10.6%	9.7%
<b>Via someone I know</b>	38.8%	19.4%	30.9%
<b>Home stock from before the ban</b>	21.7%	36.6%	27.8%
<b>Webshop</b>	18.1%	23.0%	20.1%
Dutch	6.0%	3.1%	4.9%
European, non-Dutch	8.9%	13.1%	10.6%
Non-European	2.1%	2.1%	2.1%
Unknown	2.1%	6.3%	3.8%
<b>Social Media</b>	19.2%	4.7%	13.3%
<b>Physical shop in the Netherlands</b>	12.8%	11%	12.1%
<b>I add flavor with an accessory</b>	2.5%	8.9%	5.1%
<b>Other</b>	3.2%	4.7%	3.8%

Most of those who quit vaping due to the ban did not use a **replacement product**

- 27% of those who quit vaping because of the flavor ban used a replacement
  - 13% smoked cigarettes more often
  - 9% initiated cigarette smoking
- 17% of consumers who did **not** quit vaping because of the flavor ban used a replacement

The use of **related products** decreased (e.g., cigarettes) or remained stable (e.g., nicotine pouches/snus), see figure 2.

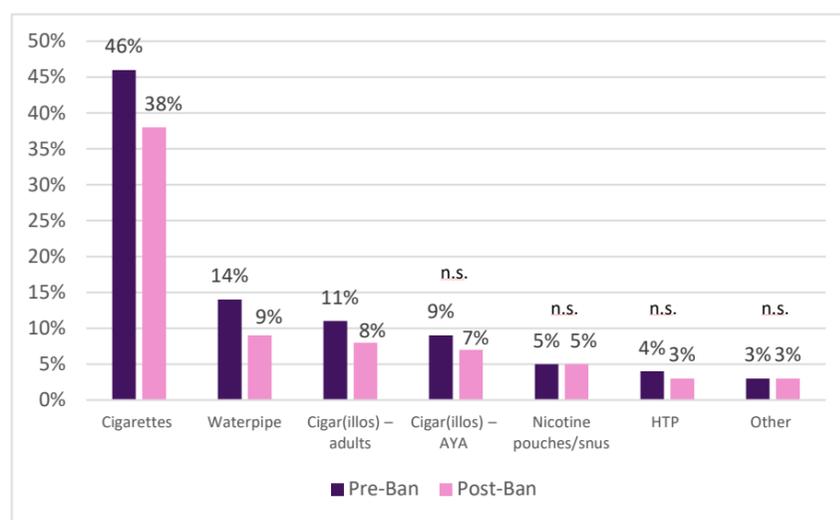


Figure 2. Other product use among e-cigarette users  
n.s. = not significant

## Conclusions

- The e-cigarette flavor ban effectively reduced e-cigarette use, potentially benefiting public health.
- There was no population-wide shift to alternative products.
- Many of those who still use flavors purchase them across the border.
- To enhance policy effectiveness, we recommend international adoption of similar flavor bans or other strategies to restrict cross-border purchasing.
- The effect on preventing uptake in non-users is yet to be determined.

For more information and the list of 16 permitted flavors, see the RIVM fact sheet:

