



PHILIP MORRIS  
INTERNATIONAL

# 2023

## INVESTOR DAY

# Championing a Smoke-Free World

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*Chief Life Sciences Officer Smoke Free Products*

**September 28, 2023**

## Forward-Looking and Cautionary Statements

- This presentation contains projections of future results and goals and other forward-looking statements, including statements regarding business and regulatory plans, expectations, opportunities, ambitions, targets, and strategies. These forward-looking statements and anticipated results reflect the current views and assumptions of management and are inherently subject to significant risks, uncertainties and inaccurate assumptions. In the event that risks or uncertainties materialize, or underlying assumptions prove inaccurate, actual results could vary materially from those contained in such forward-looking statements. Pursuant to the “safe harbor” provisions of the Private Securities Litigation Reform Act of 1995, PMI is identifying important factors that, individually or in the aggregate, could cause actual results and outcomes to differ materially from those contained in any forward-looking statements made by PMI
- PMI's business risks include: excise tax increases and discriminatory tax structures; increasing marketing and regulatory restrictions that could reduce our competitiveness, eliminate our ability to communicate with adult consumers, or ban certain of our products in certain markets or countries; health concerns relating to the use of tobacco and other nicotine-containing products and exposure to environmental tobacco smoke; litigation related to tobacco use and intellectual property; intense competition; the effects of global and individual country economic, regulatory and political developments, natural disasters and conflicts; the impact and consequences of Russia's invasion of Ukraine; changes in adult smoker behavior; the impact of COVID-19 on PMI's business; lost revenues as a result of counterfeiting, contraband and cross-border purchases; governmental investigations; unfavorable currency exchange rates and currency devaluations, and limitations on the ability to repatriate funds; adverse changes in applicable corporate tax laws; adverse changes in the cost, availability, and quality of tobacco and other agricultural products and raw materials, as well as components and materials for our electronic devices; and the integrity of its information systems and effectiveness of its data privacy policies. PMI's future profitability may also be adversely affected should it be unsuccessful in its attempts to produce and commercialize reduced-risk products or if regulation or taxation do not differentiate between such products and cigarettes; if it is unable to successfully introduce new products, promote brand equity, enter new markets or improve its margins through increased prices and productivity gains; if it is unable to expand its brand portfolio internally or through acquisitions and the development of strategic business relationships; if it is unable to attract and retain the best global talent, including women or diverse candidates; or if it is unable to successfully integrate and realize the expected benefits from recent transactions and acquisitions. Future results are also subject to the lower predictability of our reduced-risk product category's performance
- PMI is further subject to other risks detailed from time to time in its publicly filed documents, including PMI's Annual Report on Form 10-K for the fourth quarter and year ended December 31, 2022 and Quarterly Report on Form 10-Q for the second quarter ended June 30, 2023. PMI cautions that the foregoing list of important factors is not a complete discussion of all potential risks and uncertainties. PMI does not undertake to update any forward-looking statement that it may make from time to time, except in the normal course of its public disclosure obligations

## Glossary and Key Terms and Definitions

- A glossary of terms, including the definition for smoke-free products as well as adjustments, other calculations and reconciliations to the most directly comparable U.S. GAAP measures for non-GAAP financial measures cited in this presentation are available on our [Investor Relations website](#)
- Growth rates presented on an organic basis reflect currency-neutral adjusted results, excluding acquisitions and disposals. As such, figures and comparisons presented on an organic basis exclude Swedish Match up until November 11, 2023

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## About Me



**Education:**

MD and PhD

**Medical Training:**

Internal Medicine, Wayne State University School of Medicine and the Detroit Medical Center, Detroit, Michigan, US

Allergy and Immunology, National Institute of Allergy and Infectious Disease, National Institutes of Health, Bethesda, Maryland, US

**Medical Licenses (active):**

States of Maryland, US  
District of Columbia, US

**Work Experience (selected):**

Director, Division of Pulmonary, Allergy, and Rheumatology Products, US Food and Drug Administration (1997 to 2018)

Senior Vice President and Chief Physician Scientist, Respiratory Inflammation and Autoimmunity, Astra Zeneca Pharmaceuticals

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## The Scientific Basis for Tobacco Harm Reduction

- Many misperceptions on smoke-free products & nicotine
- The science from existing laboratory and clinical data is conclusive:
  - Heated tobacco products
  - E-vapor products
  - Oral products

**ARE NOT** equally or more harmful than cigarettes

- Nicotine is not the primary cause of smoking-related disease
- We expect future risk reduction studies to further support these facts

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## The Tobacco Harm Reduction Opportunity

A Complement to the Current Tobacco Control Approaches



### Smoking-Related Diseases 1

Smoking is addictive and causes a number of serious diseases

### Number of Smokers 2

It is estimated that ~1 billion people worldwide will continue to smoke in the foreseeable future<sup>(a)</sup>

### Smoke-Free Alternatives 3

Offering smoke-free alternatives to adult smokers is a sensible, complementary addition to existing tobacco control strategies

(a) Source: [WHO Global Report on Trends in Tobacco Smoking 2000-2025, fourth edition](#) (Accessed: May 2023)

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# Smoke-Free Product Portfolio

## INHALED PRODUCTS

### Heated Tobacco Products (HTPs)



Blade Heating      Induction Heating      Peripheral Heating

- Heats tobacco
- Uses real tobacco
- Nicotine naturally present in tobacco
- No smoke, no ash, no burning

### E-vapor Products



Ceramic Vaping System      Mesh Vaping System      Disposable Vaping System

- Vaporizes e-liquid
- No tobacco
- Nicotine is tobacco derived
- No smoke, no ash, no burning

## ORAL PRODUCTS

### Tobacco Products



Snus

- Tobacco pouch for oral use
- Uses real tobacco
- Nicotine naturally present in tobacco
- No smoke, no ash, no burning

### Nicotine Products

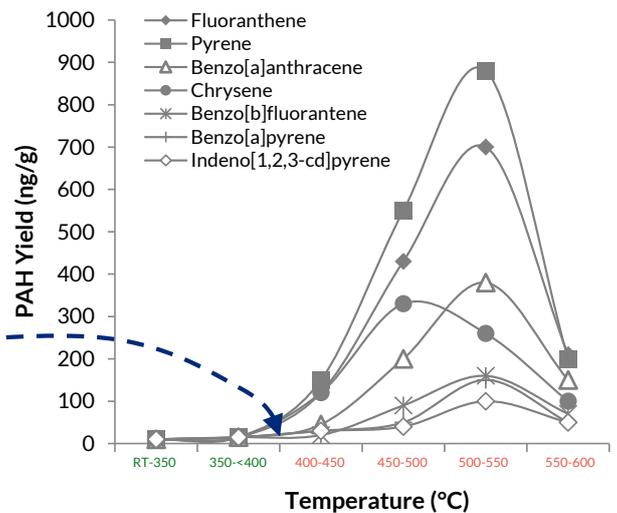
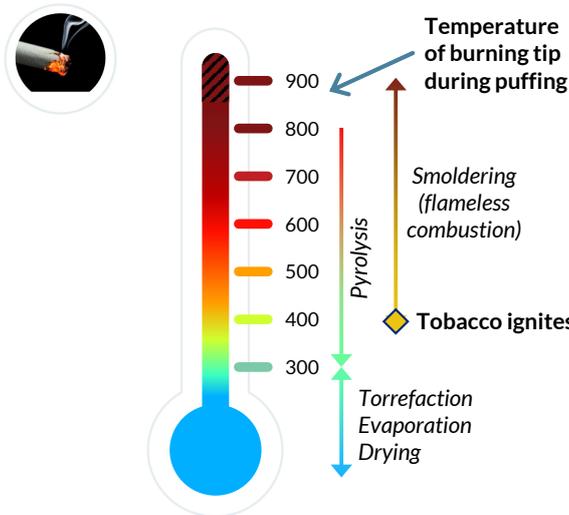


Nicotine pouches

- Nicotine containing pouch for oral use
- No tobacco
- Nicotine is tobacco derived
- No smoke, no ash, no burning

Note: The products depicted are subject to ongoing development and therefore the visuals are illustrative only and do not necessarily represent the latest stages of product development or PMI's full portfolio of smoke-free products

# Cigarette Combustion Causes Harm to Health

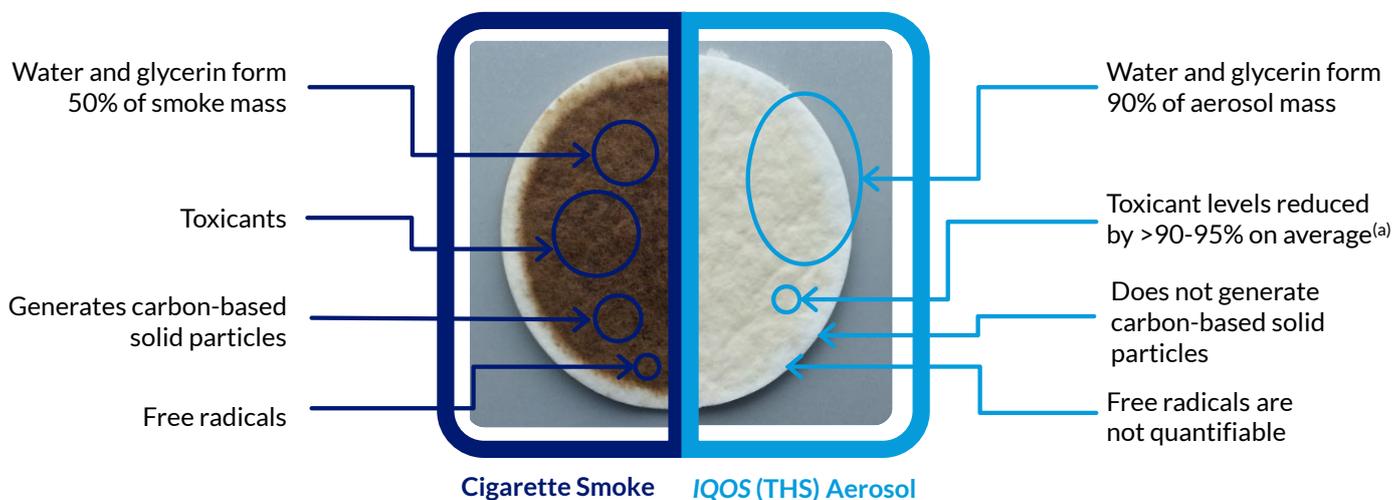


**As the Temperature Increases Beyond the Ignition Point of Tobacco the HPHC Emission Increases**

Note: HPHC stands for Harmful and Potentially Harmful Constituent. PAH stands for polycyclic aromatic hydrocarbons  
 Source: Left chart: Cozzani, 2020 (DOI: 10.1016/j.tca.2019.178475); right chart: McGrath, 2007 (DOI: 10.1016/j.fct.2006.12.010)

# The Difference Between Cigarette Smoke & IQOS (THS) Aerosol

## Heated Tobacco Aerosol Chemistry & Physics



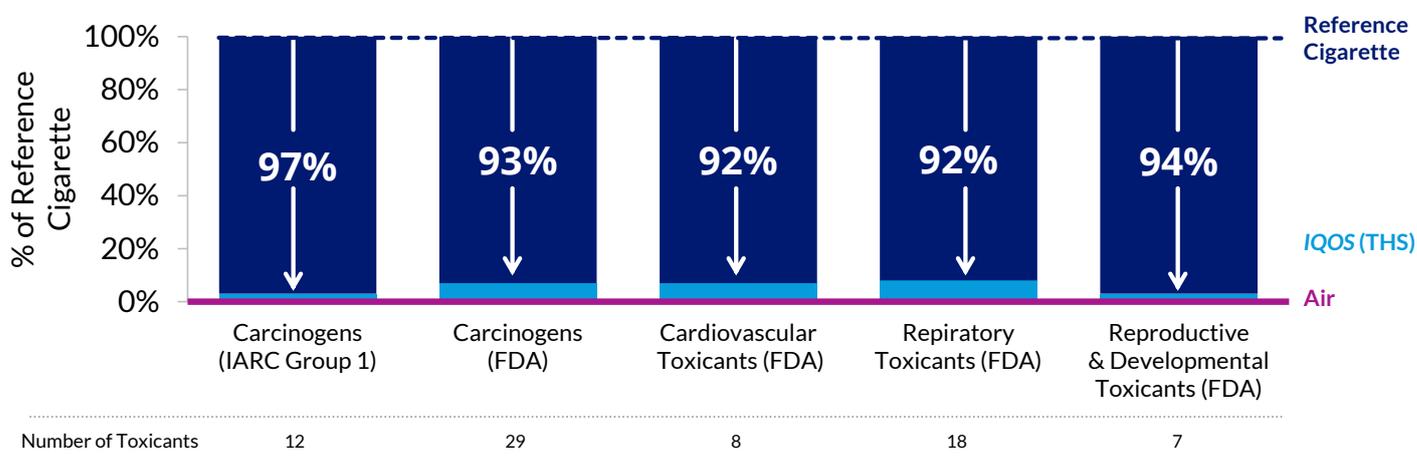
*Smoke and Aerosol Were Collected on a Cambridge Filter Pad in Accordance with the Health Canada Intense Puffing Regimen*

(a) 90-95% reduced levels of toxicants represents the average reductions in levels of a range of harmful chemicals (excluding nicotine) compared to the smoke of a reference cigarette. Note: THS here stands for Tobacco Heating System. The residue on the filter pad are from 5 cigarettes and 5 THS respectively. Source: Ghosh, 2014 (DOI: 10.2478/cttr-2014-0008) and Shein M and Geschke G, hem. Res. Toxicol. 2019, 32, 6, 1289-1298, <https://doi.org/10.1021/acs.chemrestox.9b00085>

# Reduced Toxicant Formation in IQOS (THS) Aerosol

## Heated Tobacco Aerosol Chemistry & Physics

*Average Reduction in Formation of Harmful or Potentially Harmful Constituents of IQOS (THS) Relative to Reference Cigarette, by Disease Category<sup>(a)</sup>*

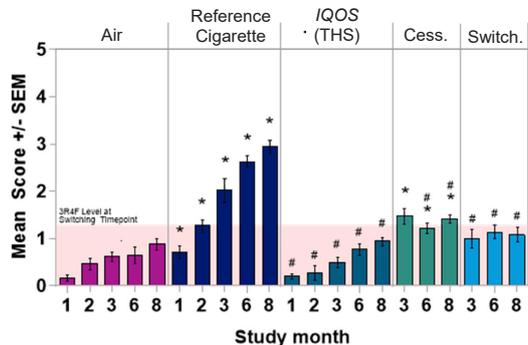


(a) Analysis of the 54 Harmful or Potentially Harmful Constituents as defined by FDA. Includes Health Canada, the WHO and the FDA-18 lists of HPHCs. Note: THS here stands for Tobacco Heating System. Health Canada's Intense Puffing Regime. Comparison on a per-stick basis (excluding nicotine). Reference Cigarette = 3R4F: University of Kentucky Reference Cigarette

# Mouse Toxicology Study – Findings in Lung & Vascular System After IQOS (THS) Exposure

ApoE<sup>-/-</sup> Mice Exposed for 8 Months, 3 h/day and 5 days/week to IQOS (THS) Aerosol

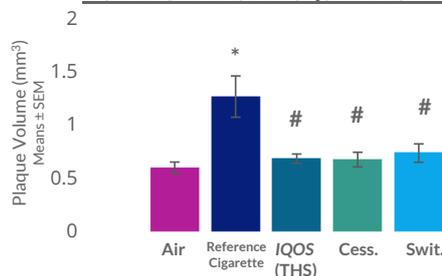
## Pulmonary Emphysema



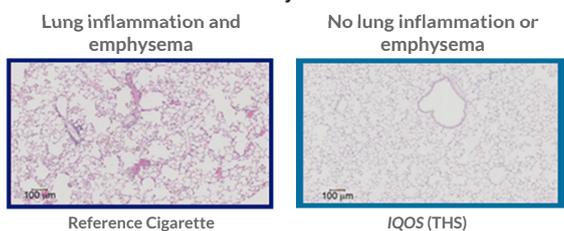
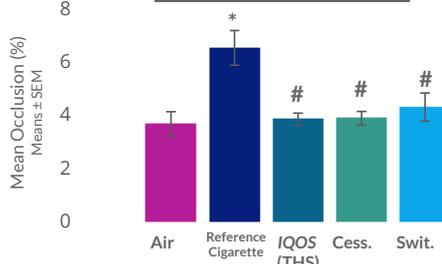
C57BL/6 ApoE<sup>-/-</sup>

\*: different from air (p<0.05)  
#: different from reference cigarette (p<0.05)

## Atherosclerotic Plaque Volume

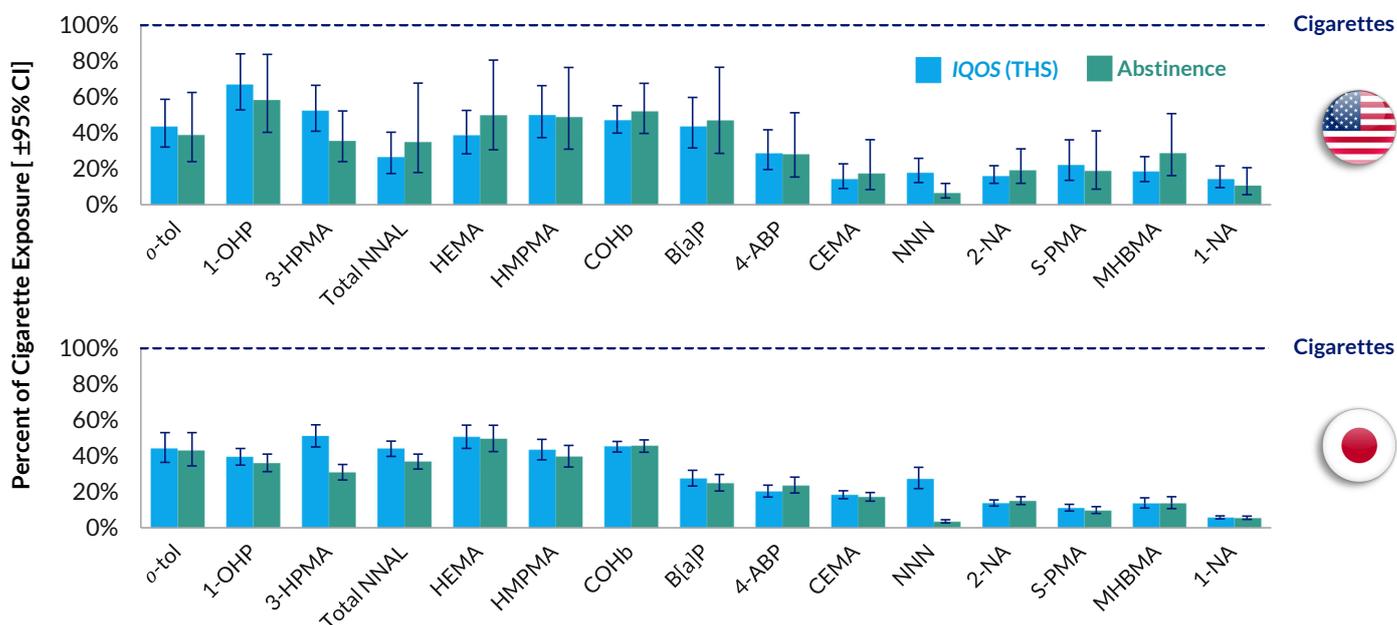


## Aortic Arch Occlusion



Note: THS: Tobacco Heating System; Reference Cigarette = 3R4F: University of Kentucky Reference Cigarette. Source: Phillips, B et al. (2016) Toxicol Sci 149(2): 411-432

# Overall Reduced Toxicant Exposure in Humans – IQOS (THS) Clinical Assessment HTP (in Smokers Who Would Otherwise Continue to Smoke)



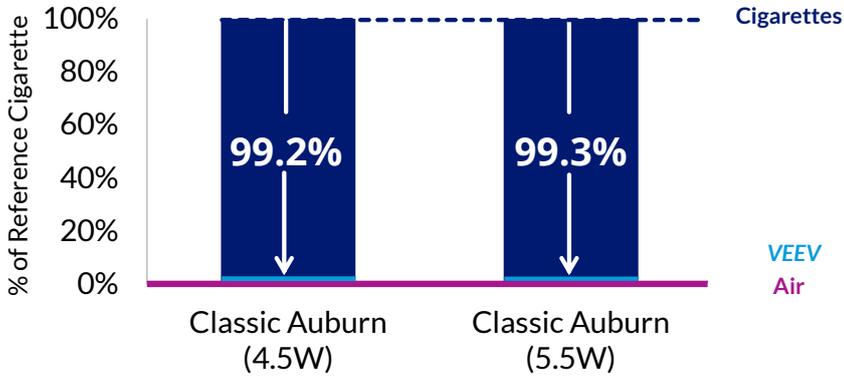
Source: Bottom: REXA-07-JP (NCT01970995) – Lüdicke et al. 2018 (DOI: 10.1093/ntr/ntx028); Top: REXA-08-US (NCT01989156) – Haziza, 2019 (DOI: 10.1093/ntr/ntz013)



# Reduced Toxicant Emission – VEEV

## E-Vapor Aerosol Chemistry & Physics

Average Reduction<sup>(a)</sup> in Emission of Harmful or Potentially Harmful Constituents (HPHC) of VEEV Relative to the Reference Cigarette for Two Power Settings



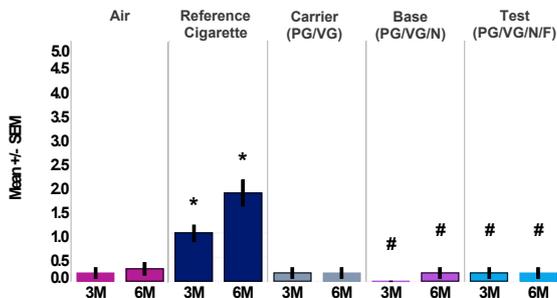
- **Significant reduction in HPHCs** compared to reference cigarette
- Reduction in HPHCs were largely **independent of power setting**
- **No carbon-based solid particles** generated

(a) Average HPHC reduction (excluding nicotine) in 3 batches per product version when normalized to 100% of the 1R6F combustible reference cigarette smoke levels. The average HPHC reduction refers to 16 HPHCs measured in the emissions, (15 HPHCs in common between FDA ENDS (33) list of analytes (for e-vapor products) and Health Canada & WHO (46) (for tobacco products) and benzo[a]pyrene). Reduction was calculated comparing data on a per puff basis based on standard puffing regime ISO-20768:2018.

# Mouse Toxicology Study – Findings in the Lung After E-Vapor Aerosol Exposure

ApoE<sup>-/-</sup> mice exposed for 6 months, 3 h/day and 5 days/week to E-Vapor aerosol

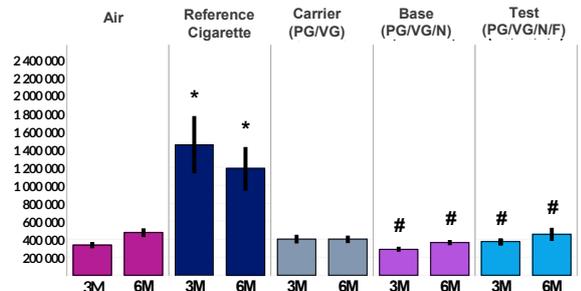
### Pulmonary Emphysema



**C57BL/6 ApoE<sup>-/-</sup>**

\*: different from air (p<0.05)  
#: different from reference cigarette (p<0.05)

### Total Cells

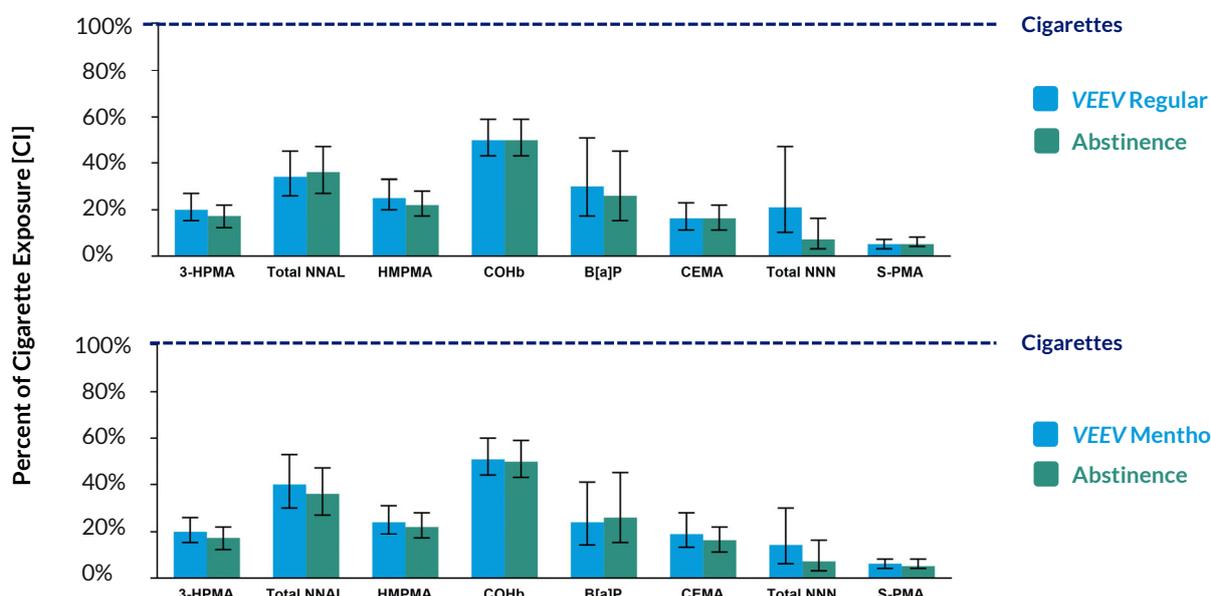


Note: PG stands for Propylene Glycol, VG stands for Vegetable Glycerin. N stands for Nicotine. F stands for Flavor. Reference Cigarette = 3R4F: University of Kentucky Reference Cigarette. Source: Wong et al. Archives of Toxicology (2021) 95:1805–1829, <https://doi.org/10.1007/s00204-021-03020-4>; <https://pubmed.ncbi.nlm.nih.gov/33963423/>



# Overall Reduced Toxicant Exposure in Humans: VEEV

## Clinical Assessment E-Vapor (in Smokers Who Would Otherwise Continue to Smoke)



Note: COHb was assessed in the morning instead of evening (i.e., after at least 7 hours of abstinence), therefore levels of reductions were smaller than in the THS studies  
 Source: P4-REXC-06 (NCT05487456)

# Comparison of Exposure to HPHCs in Cigarettes, Swedish Snus and Nicotine Pouches

### Cigarettes



- Exposure to over 6000 chemicals, including high levels of carcinogens and toxicants effecting the lung, heart and other organ systems <sup>(a)</sup>
- Exposure to ~100 HPHCs
- Lung exposure to carbon-based nanoparticles and free radicals
- Lung exposure to 600 mg/m<sup>3</sup> total particulate matter

### Snus



- Exposure to a much lower number of chemicals overall with significantly lower exposure to carcinogens and toxicants effecting the lung, heart and other organ systems.
- Exposure to 15<sup>(b)</sup> HPHCs out of 36 HPHCs measured <sup>(c)</sup>
- No exposure to carbon-based nanoparticles and free radicals
- No direct lung exposure

### Nicotine Pouches



- Exposure to harmful chemicals even lower compared to Snus
- Exposure to 4<sup>(b)</sup> HPHCs out of 36 HPHCs measured <sup>(c)</sup>
- No exposure to carbon-based nanoparticles and free radicals
- No direct lung exposure

U.S. FDA authorized marketing with modified risk claim for diseases.

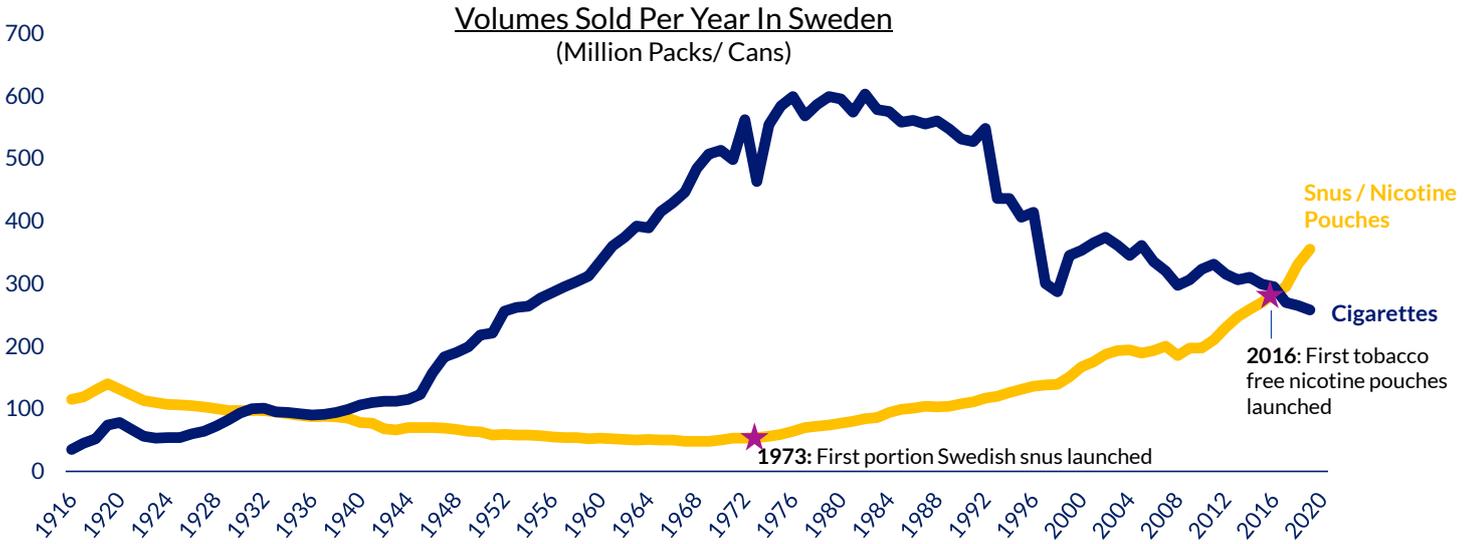
*"Using General Snus instead of cigarettes puts you at a lower risk of mouth cancer, heart disease, lung cancer, stroke, emphysema, and chronic bronchitis." U.S. FDA Oct. 22, 2019*

(a) Rodgman A, Perfetti TA. The chemical components of tobacco and tobacco smoke. Boca Raton (FL): CRC Press, Taylor & Francis Group; 2013  
 (b) Excluding nicotine

(c) Back et al. BMC Chemistry (2023) 17:9, <https://doi.org/10.1186/s13065-023-00918-1>;



# Oral Tobacco Products and Cigarette Sales in Sweden



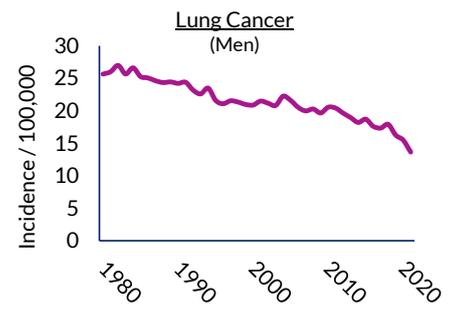
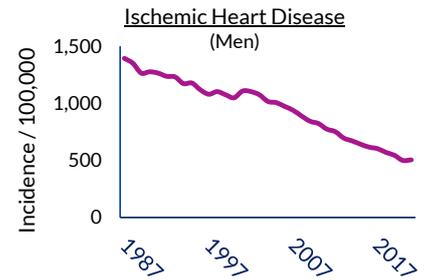
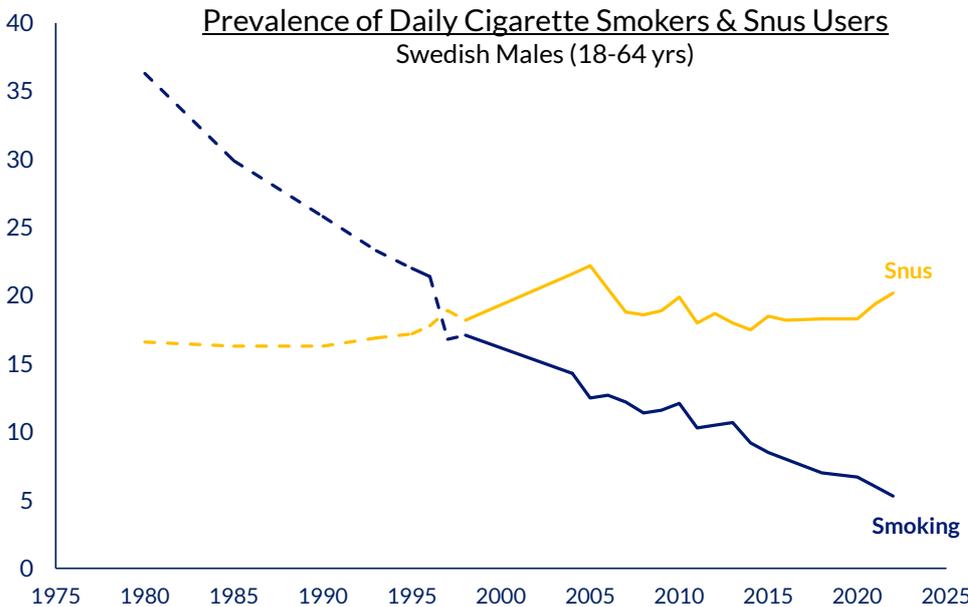
Note: Temporal associations do not demonstrate cause and effect and are subject to inherent limitations. Specific factors associated with changing cigarette sales volumes over time have not been fully analyzed. 20 cigarettes per pack; 21 estimated average pouches in can for snus and nicotine pouches

Source: Swedish Match Estimates, SMD Logistics; 2019 TPSAC Meeting Materials and Information | FDA



# Real-World Data and Evidence on Harm Reduction in Sweden

Usage Rates of Snus and Cigarettes in Swedish Men Correlate With a Reduction in Tobacco Related Diseases



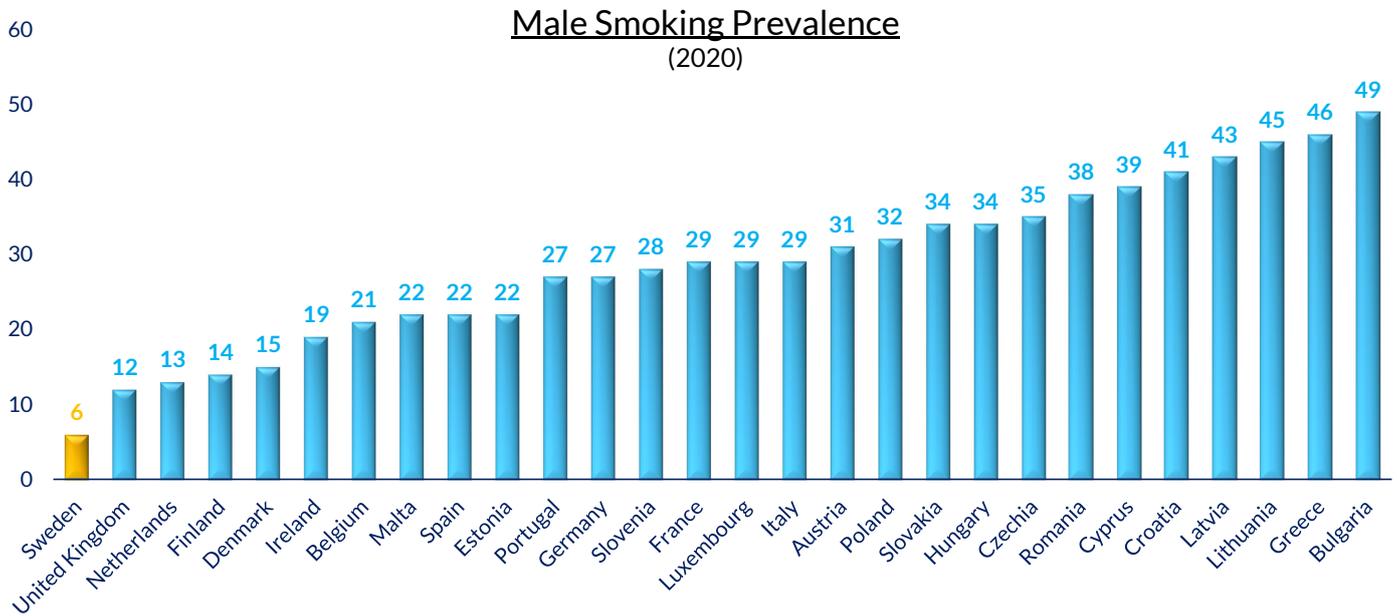
Note: Temporal associations do not demonstrate cause and effect and are subject to inherent limitations. Specific factors associated with changing daily smoker prevalence, ischemic heart disease and lung cancer over time have not been fully analyzed.

Source: Incidence Data - Swedish National Board Of Health And Welfare, Statistical Database (Accessed 5/2023); Prevalence Data: 1980-1998 - Henningfield J, Fagerstrom K *Tobacco Control* 2001;10:253-257; 2004-2022 - National Public Health Survey/Living Habits/ Tobacco And Nicotine (Accessed 6/2023)



# Sweden: Lowest Male Smoking Prevalence in the EU

## Product Use and Health Harm Reduction

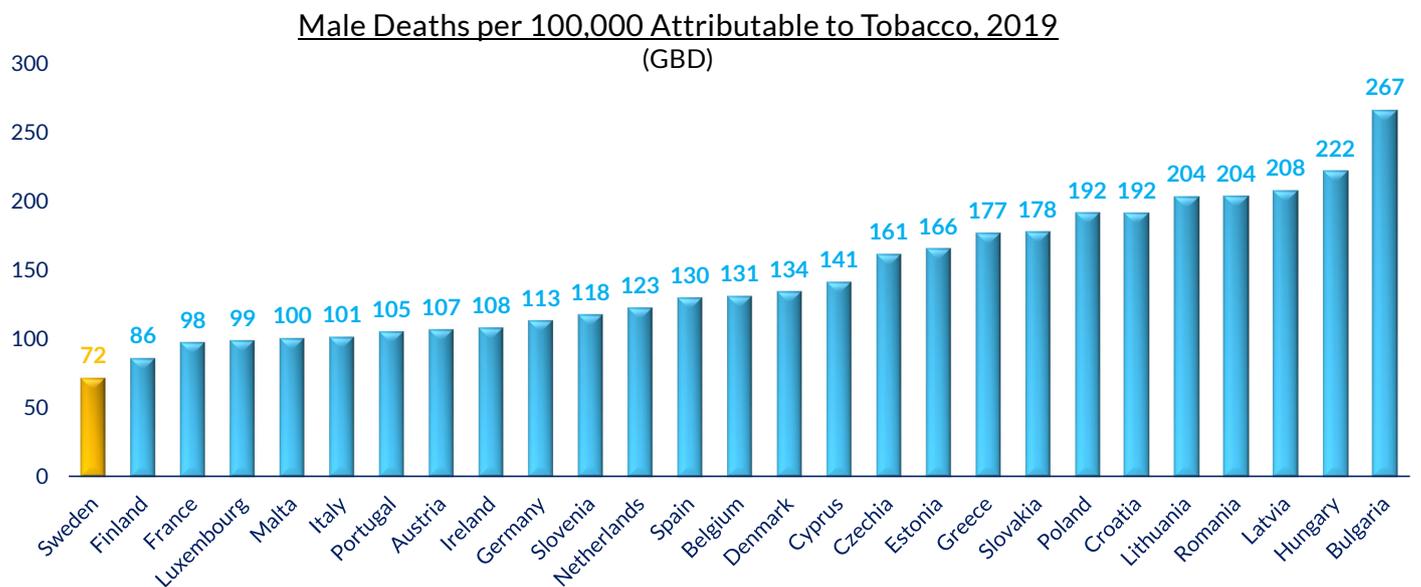


Source: Dataset Special Eurobarometer 506: Attitudes of Europeans towards tobacco and electronic cigarettes, February 2021



# One of Lowest Tobacco-Attributable Male Mortality in EU

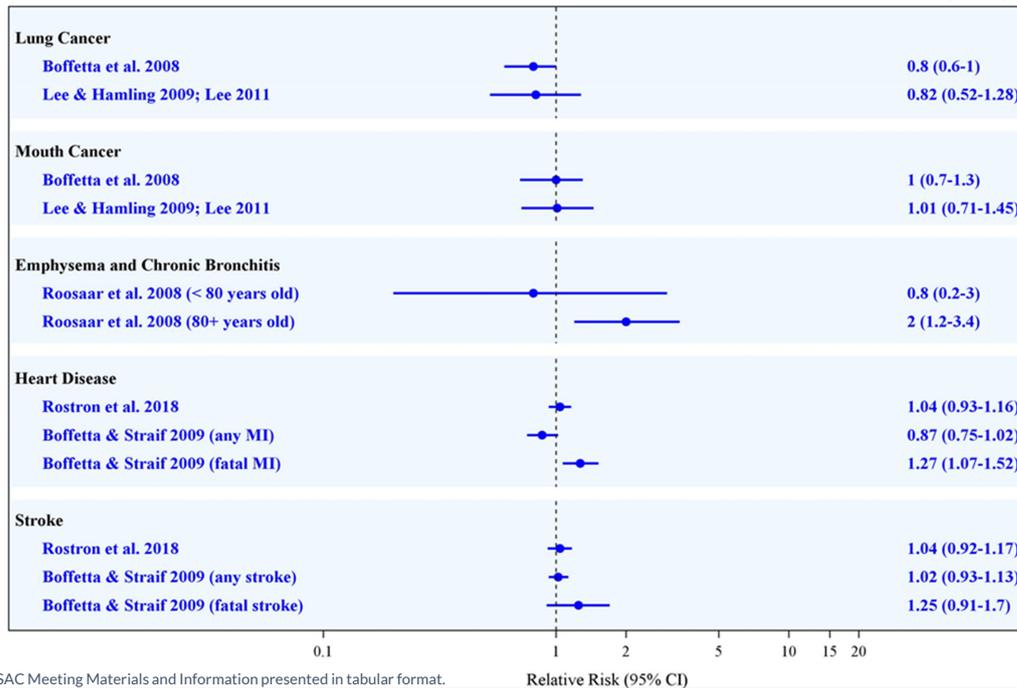
## Product Use and Health Harm Reduction



Source: Lars M. Ramström: National availability of snus is clearly associated with lower rates of mortality attributable to tobacco—while country-level implementation of WHO tobacco control measures is not, Global Forum on Nicotine 2022, <https://gfn.events/new-research/lars-m-ramstrom-2022/>



# Epidemiology Supports Snus Reduced Risk Claim for Major Smoking Related Diseases



Source: Based on 2019 TPSAC Meeting Materials and Information presented in tabular format.

## Health Effects of Oral Nicotine Products (e.g., ZYN)

Long-term Data from Oral Tobacco Product (e.g., Snus) Provides a Basis

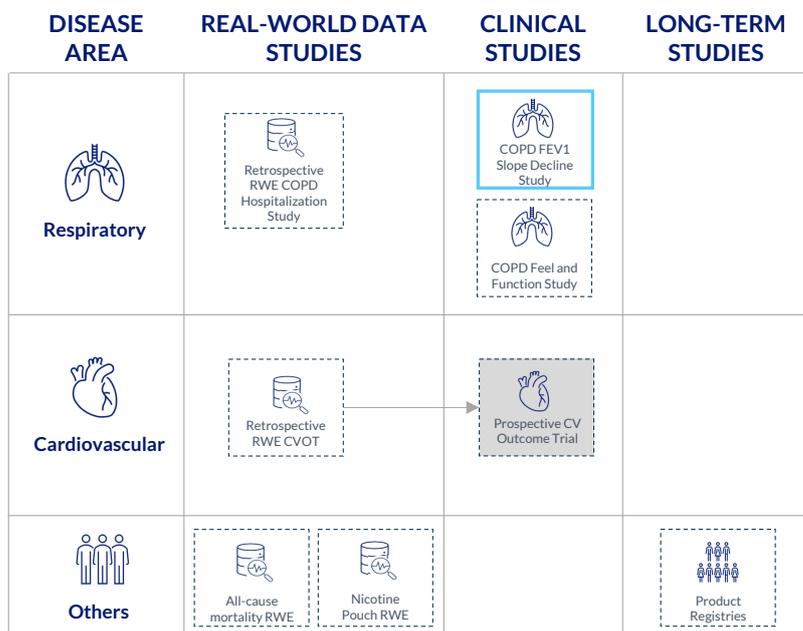
- The chemical composition of nicotine pouches contain the same or less amount of harmful and potential harmful constituents compared to Snus
- No additional harmful or potentially harmful constituents are added to the nicotine pouch compared to the constituents in Snus
- Nicotine exposure for users of nicotine pouches is comparable to that of a Snus user
- The nicotine pouch is used in a similar way as Snus



*The oral nicotine category is new but the long-term health effects can be predicted based on oral Snus data given some fundamental assumptions are met*

# Future Evidence Generation For Relative Risk Reduction

## Studies to Show Substantial Evidence on Major Smoking Related Diseases – Our Roadmap



### Core Strategy to Show Substantial Evidence in Diseases

- Focus on Epidemiology / Real-World Evidence
- Healthcare Utilization, e.g., hospitalization
- Demonstrate Direct Clinical Benefit:
  - Feel / Symptoms
  - Function / Activity
  - Survival / Mortality

  Ongoing  
   Planned  
   Plan-B  
 COPD = Chronic Obstructive Pulmonary Disease  
 CV = Cardiovascular  
 CVOT = Cardiovascular Outcome Trial  
 RWE = Real-World Evidence

# Nicotine is Not the Primary Cause of Smoking-Related Diseases

## What we know

Tobacco smoke contains thousands of chemicals. This **mix of chemicals – not nicotine – is the primary cause of serious disease and death** in tobacco users, including fatal lung diseases ... *like chronic obstructive pulmonary disease (COPD), and cancer.* [emphasis added]

[US FDA Website](#) (Accessed: May 2023)

**Nicotine** is addictive, but not intoxicating and not functionally impairing<sup>(a)</sup>

## What needs to be better understood

1. Understand the health risks of nicotine per-se in different forms of administration
2. Understand potential benefits of nicotine that consumers report, and investigate nicotine levels showing such benefits:
  - Concentration, short-term memory, etc.,
3. Understand therapeutic applications of nicotine
  - Therapeutic benefit of nicotine as NRT – inhaled NRT likely giving similar nicotine kinetics and experience to cigarettes

# Nicotine – Potential Medical or Therapeutic Benefits

Potential Benefit	Source/Citation
Chronic Cough	Chest, 2016; 149 (1): 161-5
Anxiety, Depression	Neuroreport, 2002; 13 (9): 1097-1106
Schizophrenia	Neuropsychopharmacology, 2004; 29(7): 1378-85
Ulcerative colitis	Alimentary Pharmacology and therapeutics, 2012; 36 (11-12): 997-1008
Attention deficit hyperactive disorder	Psychopharmacology, 1996; 123 (1): 55-63
Parkinson's disease	Movement disorders, 2012; 27 (8): 947-57
Mild Cognitive impairment	Neurology, 2012; 78 (2): 91-101
Alzheimer's disease	Psychopharmacology, 1992; 108 (4): 485-94

With funding from the US National Institutes of Health (NIH), the MIND (Memory Improvement through Nicotine Dosing) Study is testing whether nicotine can safely improve memory and functioning in people with mild memory loss and mild cognitive impairment [www.mindstudy.org](http://www.mindstudy.org)

Developing nicotine products for treating human diseases may not be practical, except for high unmet need where the demonstrated benefits would justify the risks

Note: The list of potential benefits was created from a review of third-party studies. PMI has not independently assessed whether the existing evidence is sufficient to support a conclusion that nicotine has a beneficial effect on each of the conditions listed

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# Cost of Regulatory Inaction

## Encouraging progress being made in many countries – however:

- A failure to acknowledge the role that harm reduction can play in bringing about the end of cigarettes seriously hinders the ability of adult-smokers to switch to better alternatives
- The science is clear – it is no longer a case of *IF* smoke-free alternatives are better than cigarette smoking, but *BY HOW MUCH* they are better
- Many policymakers perceive it as safer to abstain from the debate rather than be seen as “siding” with the industry by adopting risk reduction policies
- Not making a decision on smoke-free products today is a decision in and of itself – and it’s a decision with consequences
- Governments and public health authorities must act – quickly and decisively – rather than remaining tied to outdated approaches that have failed to solve the problem of smoking

***Embracing harm reduction will accelerate the end of smoking***

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# Championing a Smoke-Free World

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