

FOUNDATION FOR A
SMOKE-FREE WORLD

Assessing the Impact of Tobacco Harm Reduction

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Disclaimer

- **The views and opinions presented here represent those of the speaker and should not be considered to represent findings or recommendations from the Foundation for a Smoke-Free World.**

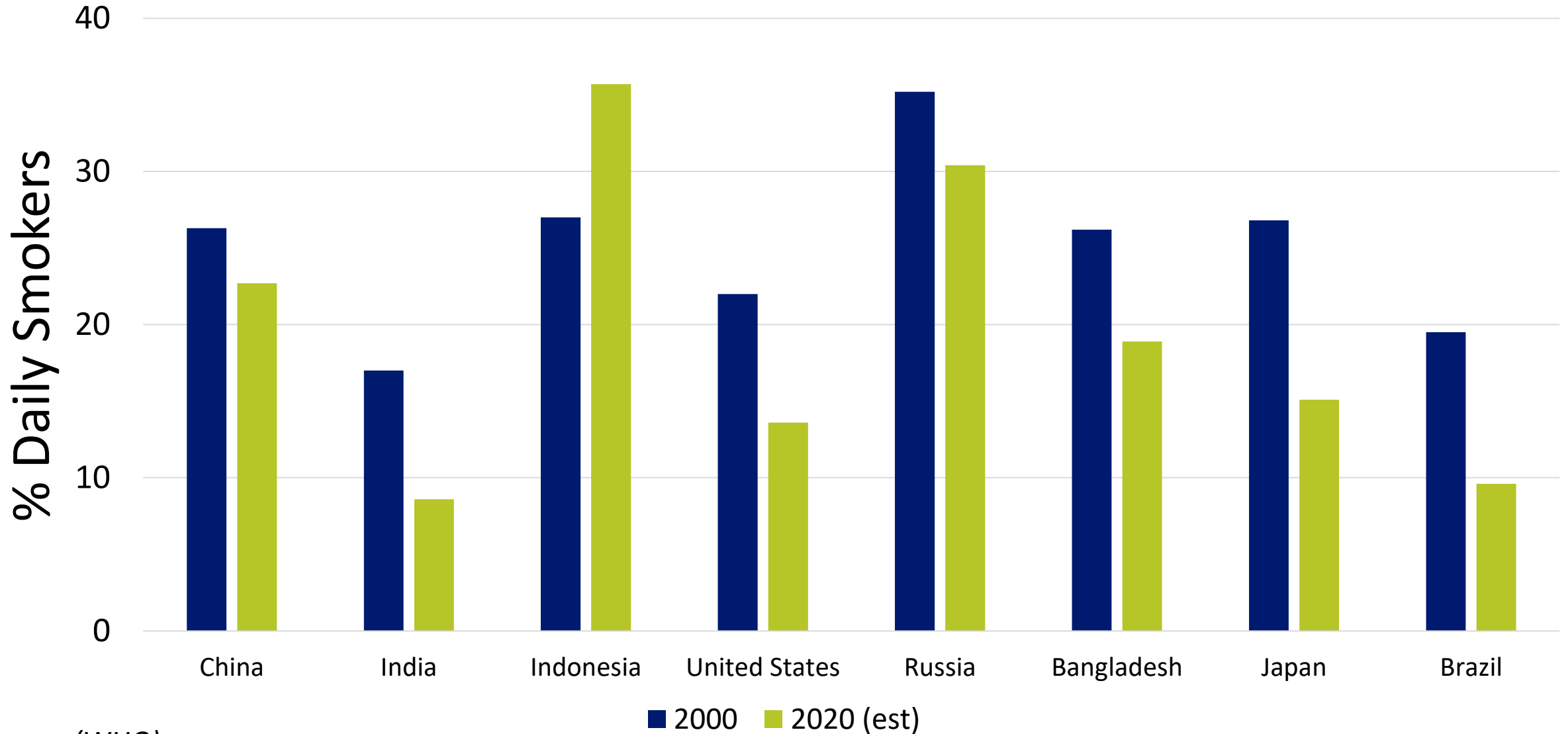


Problem

2018 State of Smoking

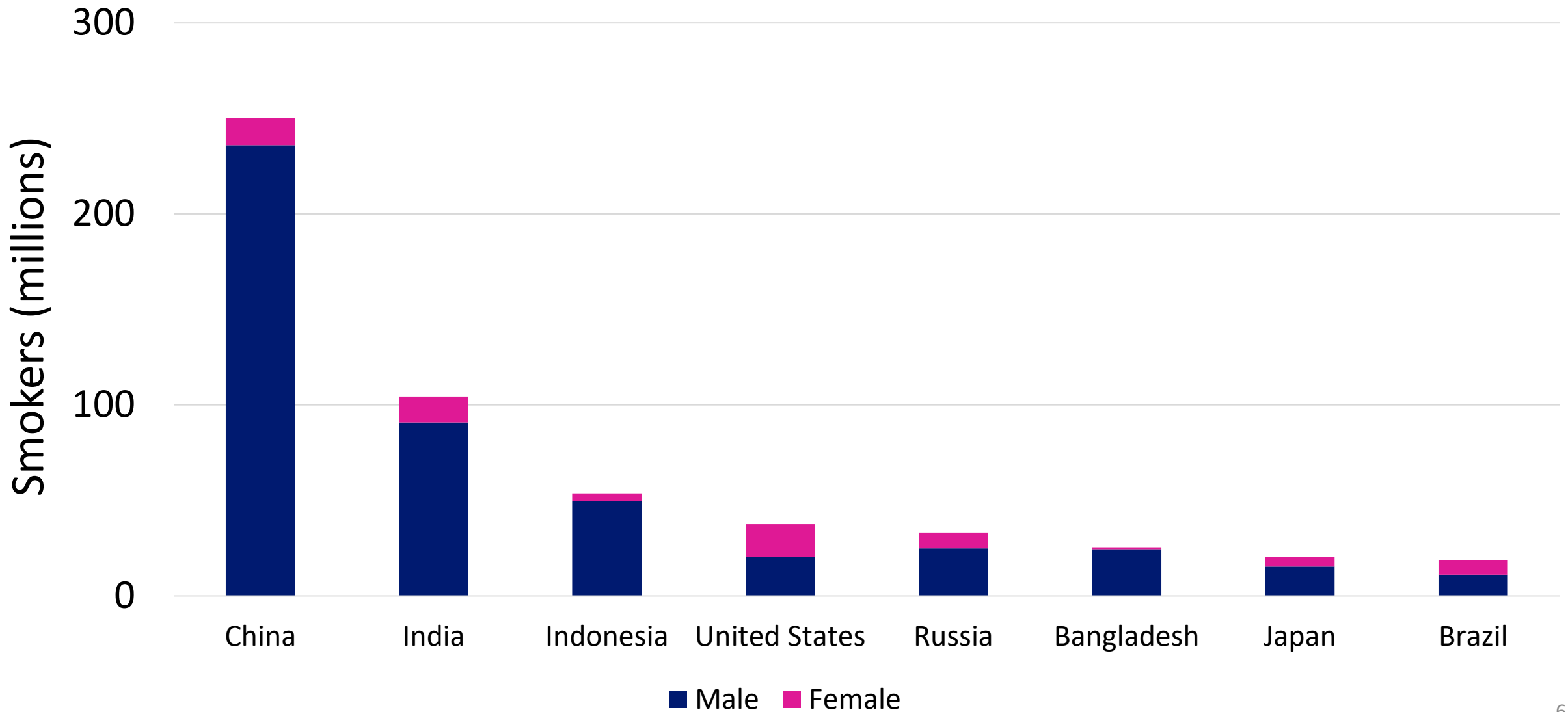
- Smoking is the world's leading preventable cause of death.
- Smoking could kill an estimated **1 Billion** people this century.

Smoking Prevalence

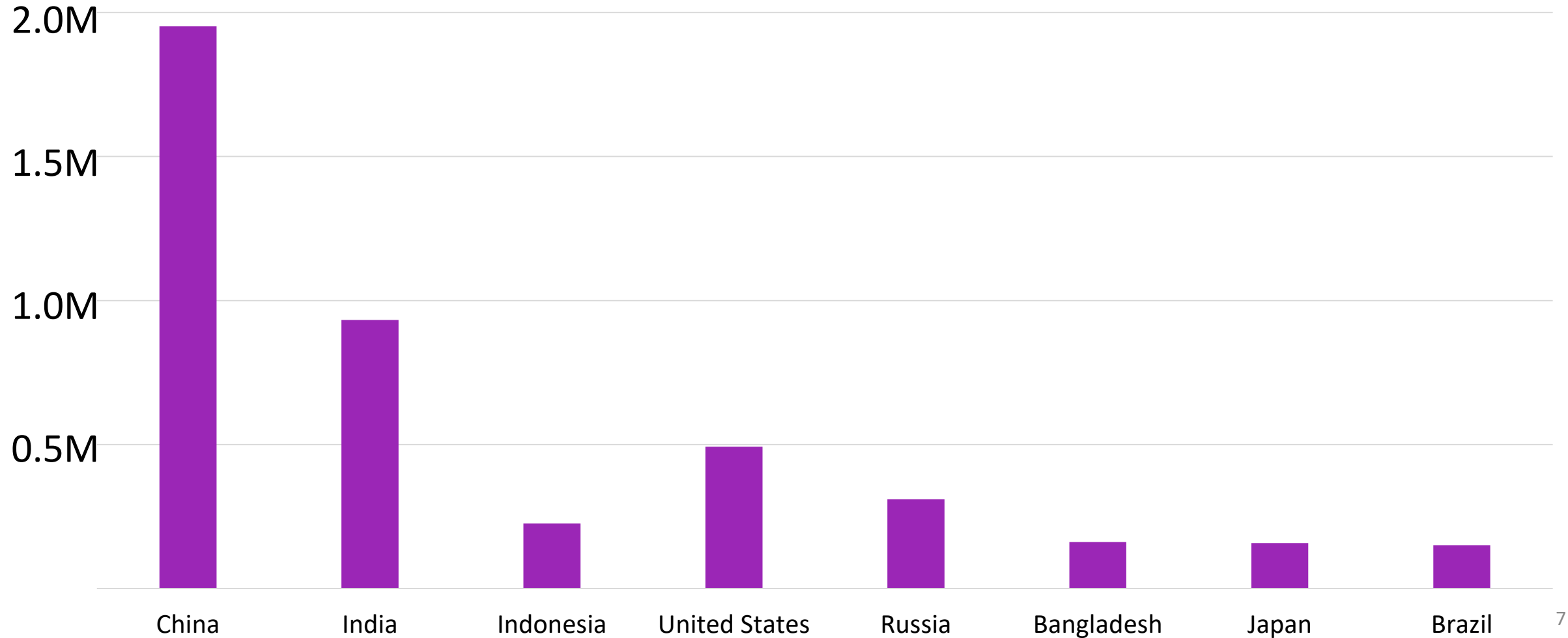


(WHO)

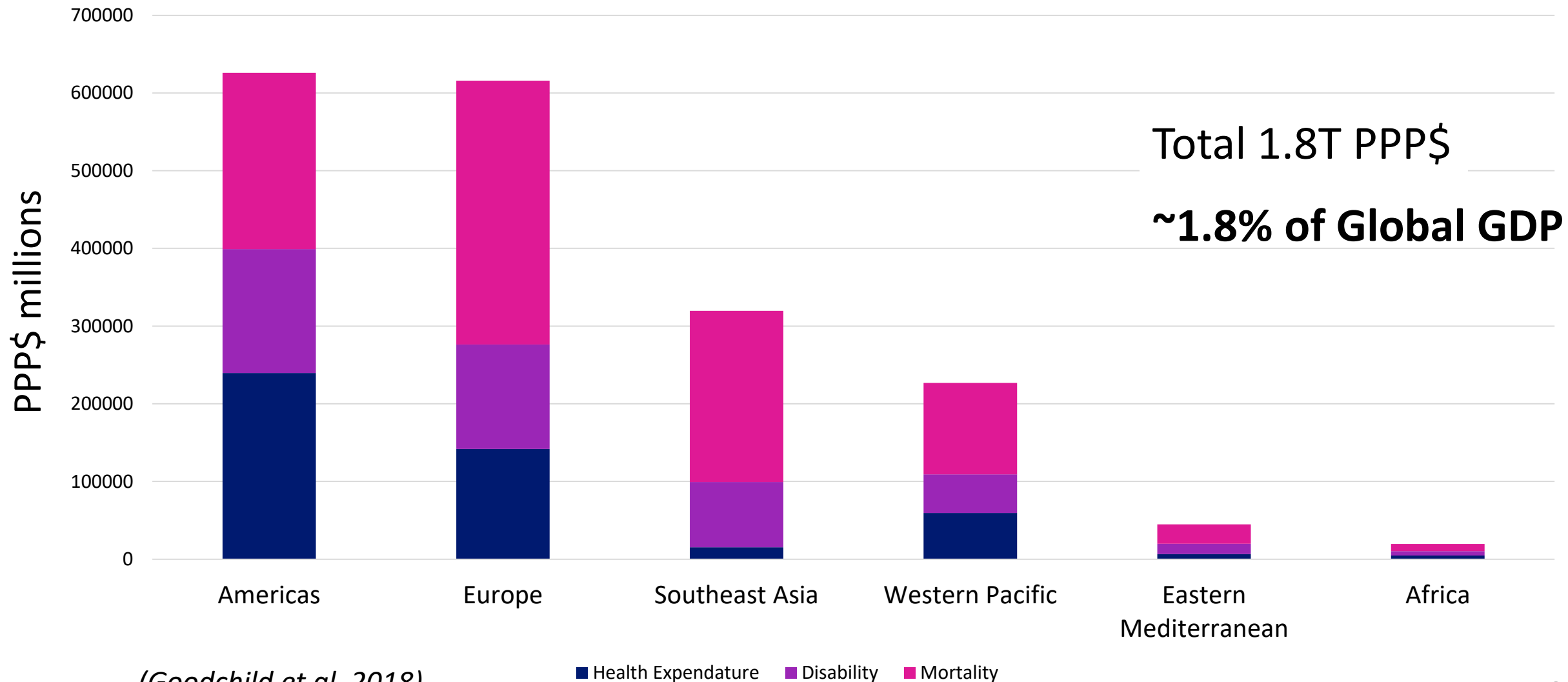
Global Smoking



Annual Smoking Attributable Deaths



Smoking Attributable Morbidity and Mortality Impact on Global Economy

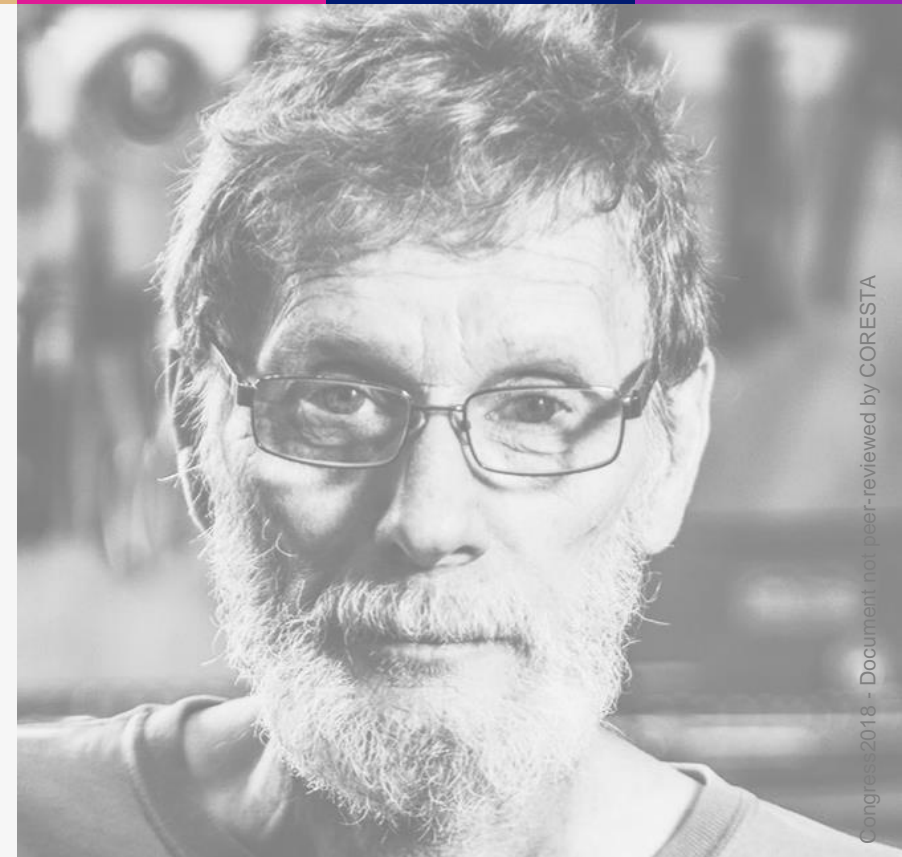


(Goodchild et al, 2018)



The State of Smoking 2018

Global Survey Findings and Insights



Understand Smokers' Experiences and Challenges

Smoking is deeply integrated into most smokers' daily lives, so quitting means more to them than just giving up cigarettes.



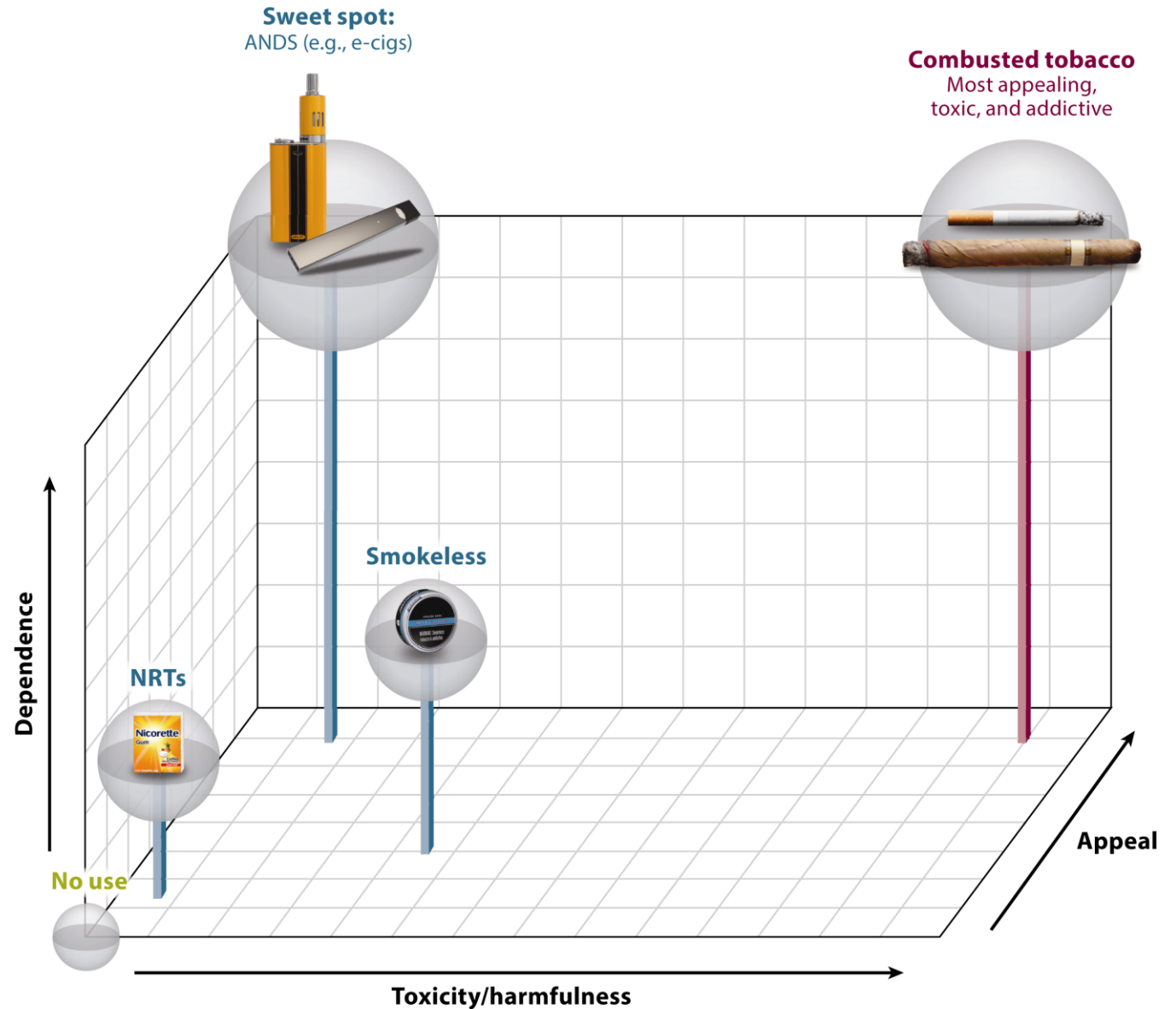
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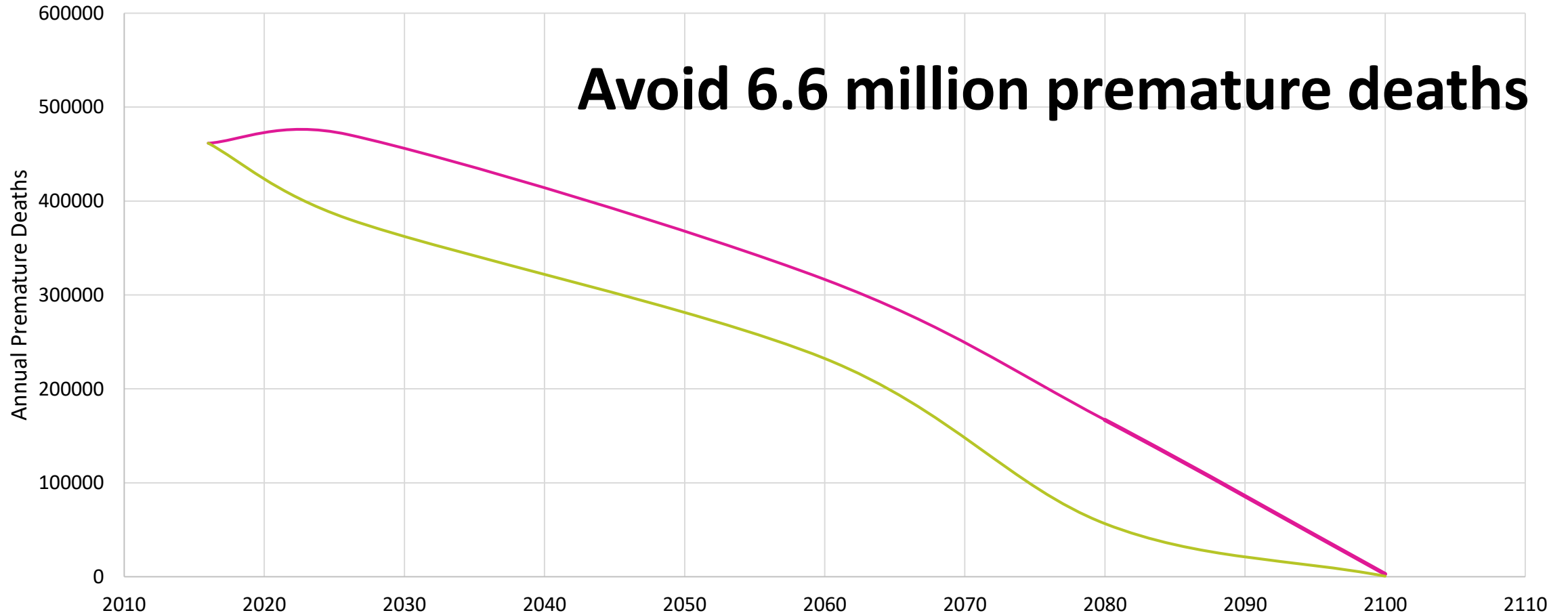
Promise

Reduced Risk Products

- Some smokers cant or do not want to quit using nicotine.
- For them reduced risk products (e.g. snus, e-cig, HNB) provide a choice to reduce their risk of death and disease from smoking

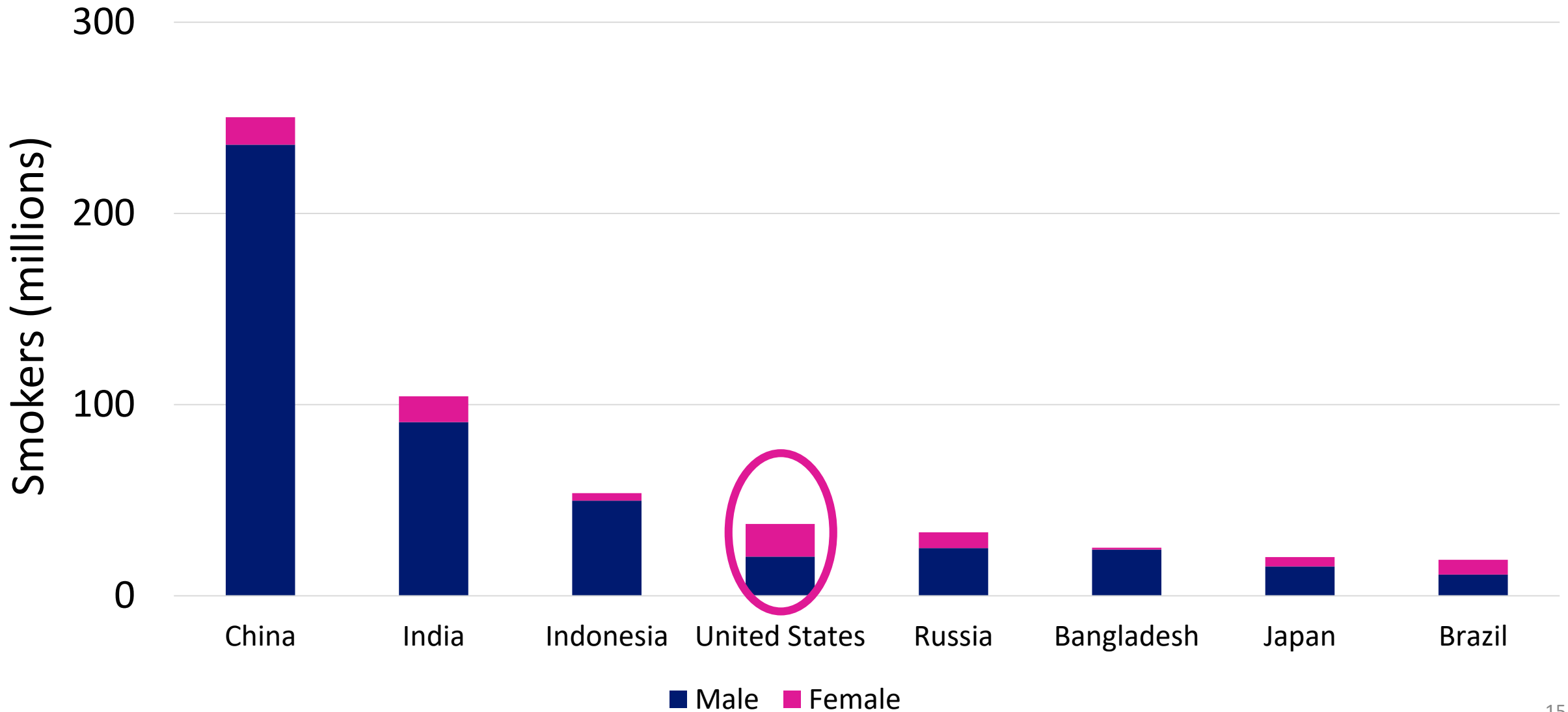


Population Effects of Reducing Risk (US)



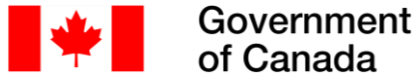
Avoid 6.6 million premature deaths

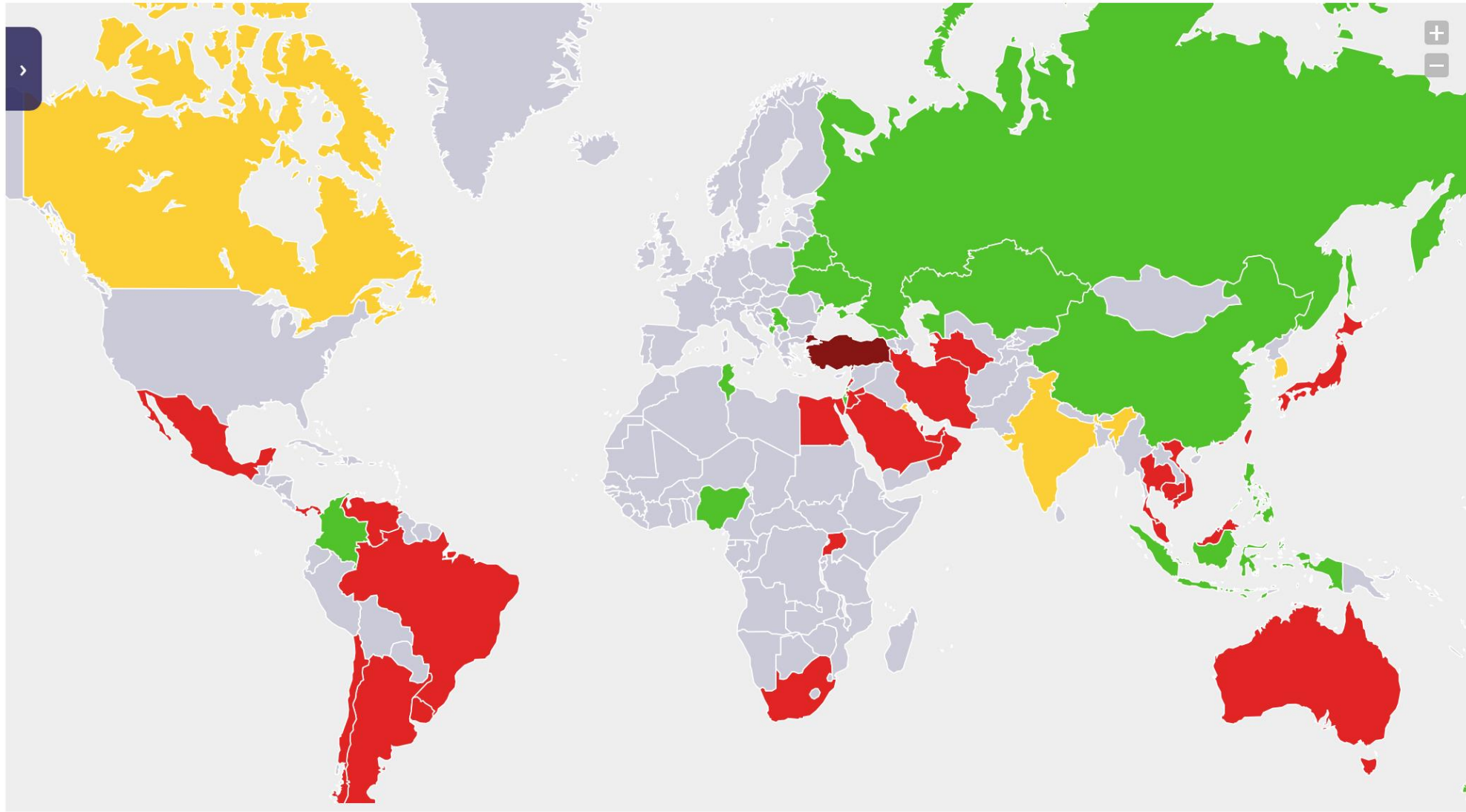
Global Smoking





The Royal Australian & New Zealand College of Psychiatrists





■ No regulation
 ■ Mild/regional regulation
 ■ Strict regulation

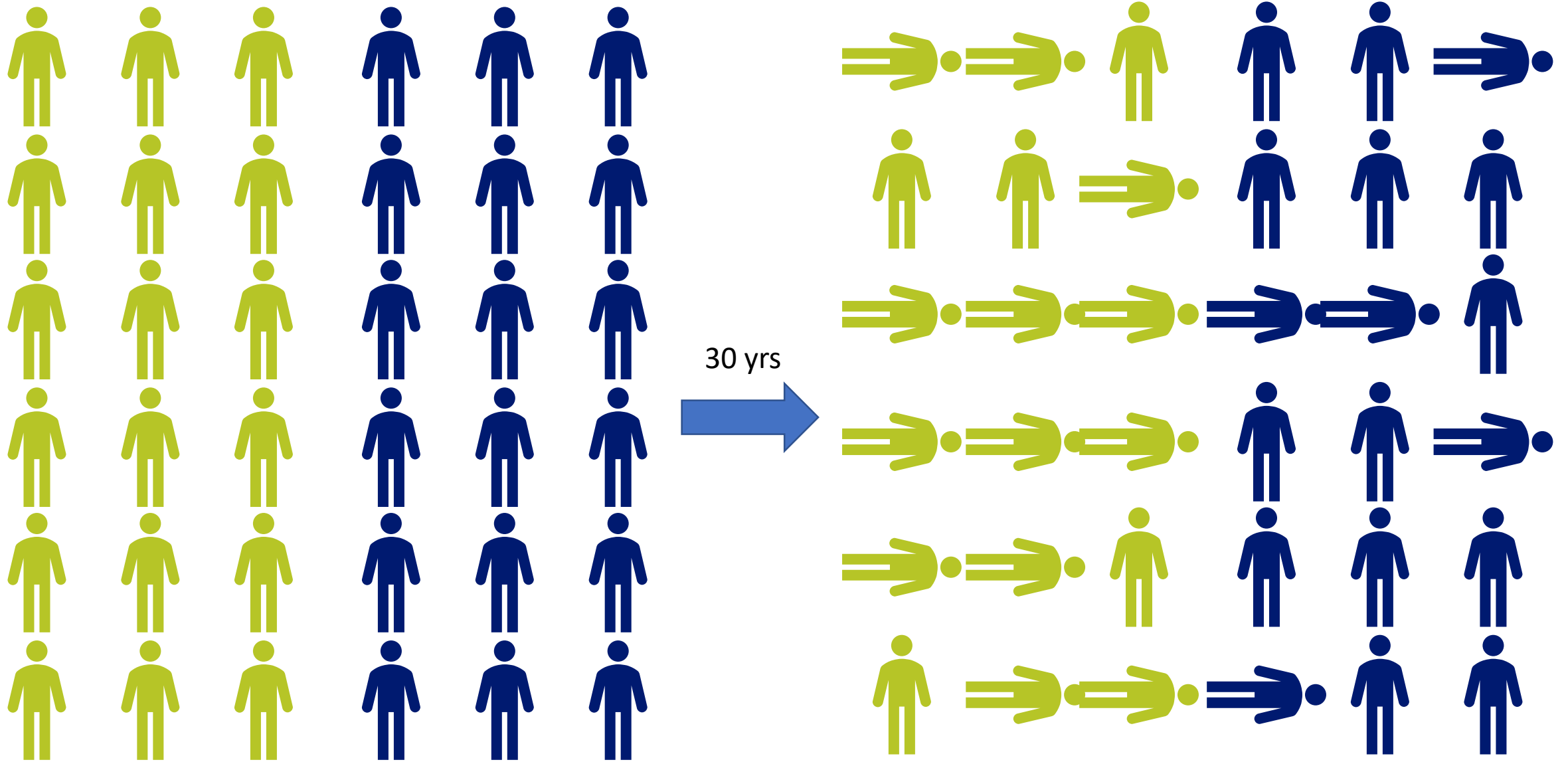
(E-cig Intelligence, 2018)

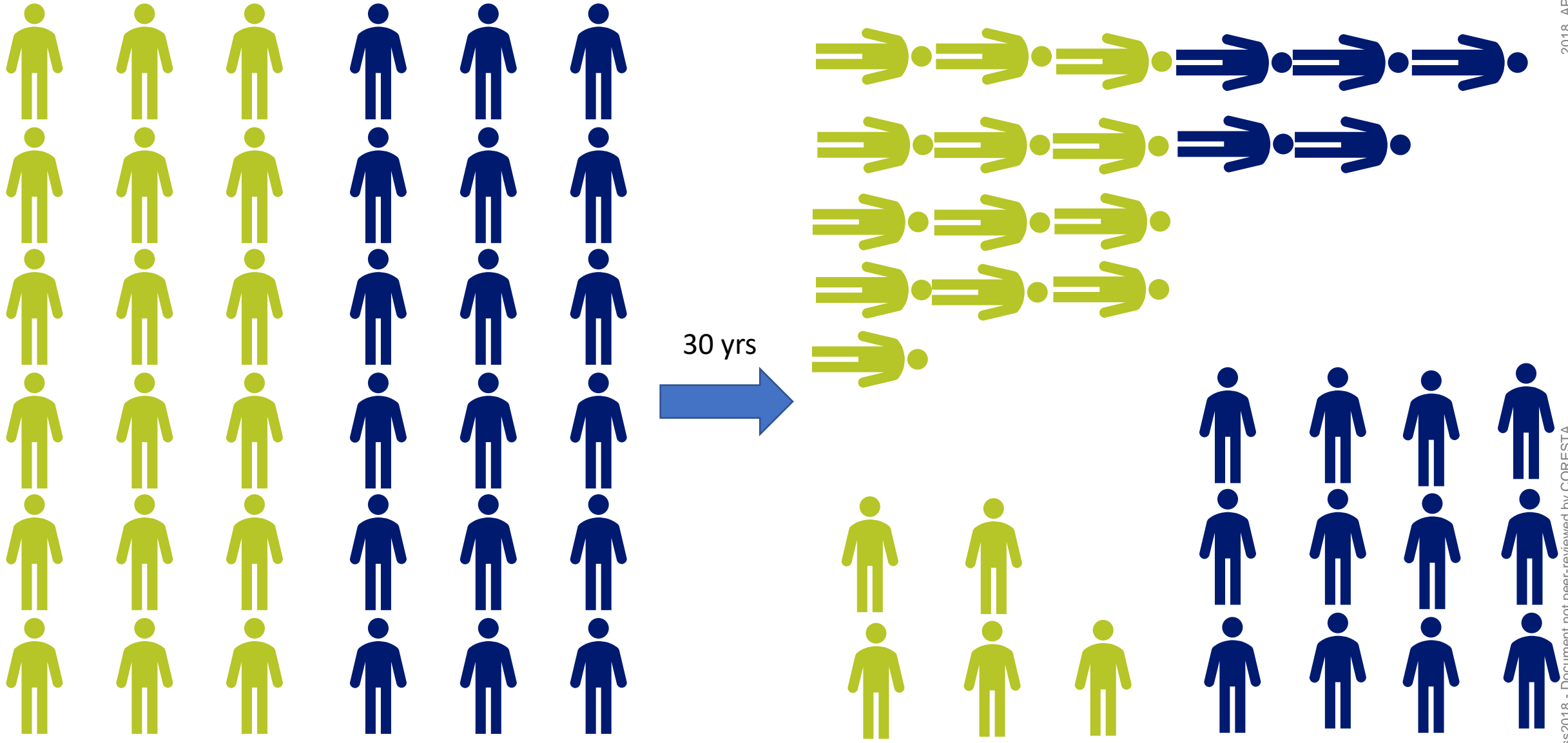
Proof

(How not to be wrong)

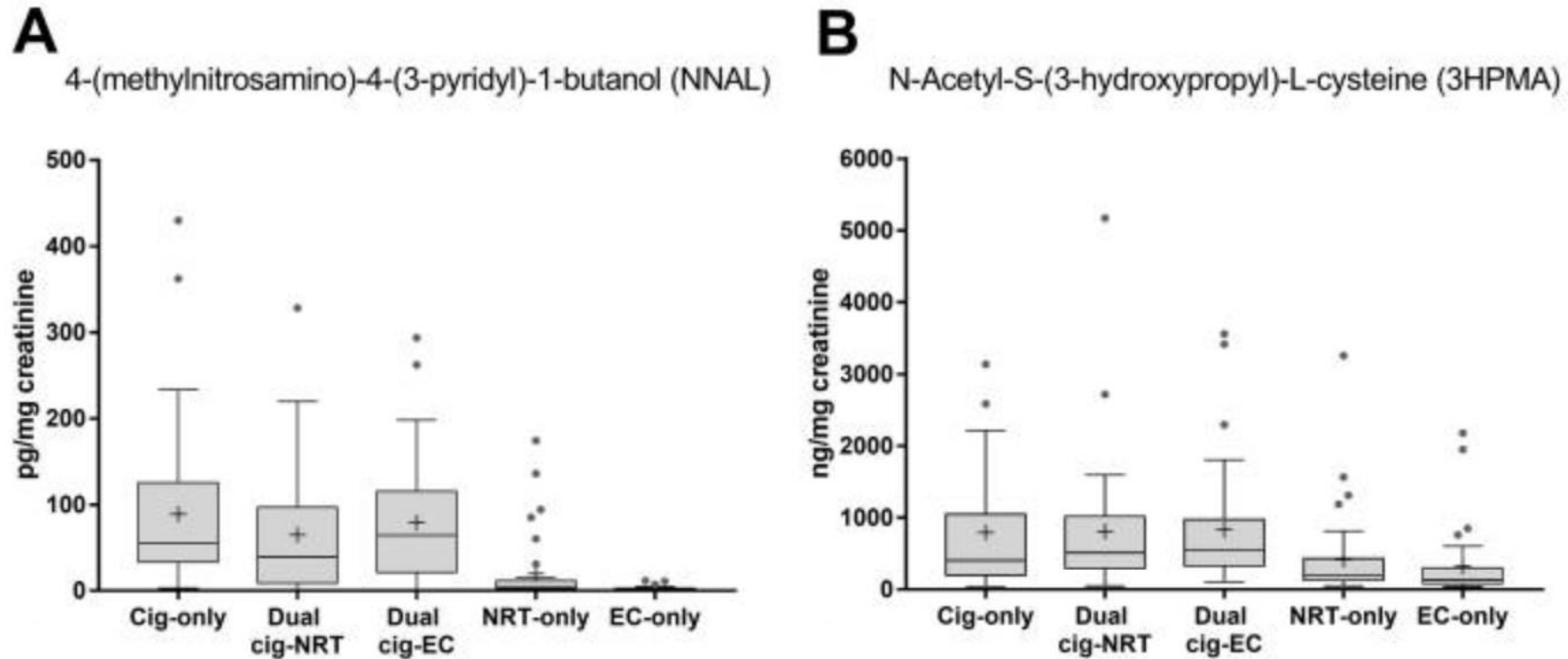


Traditional Public Health Evidence



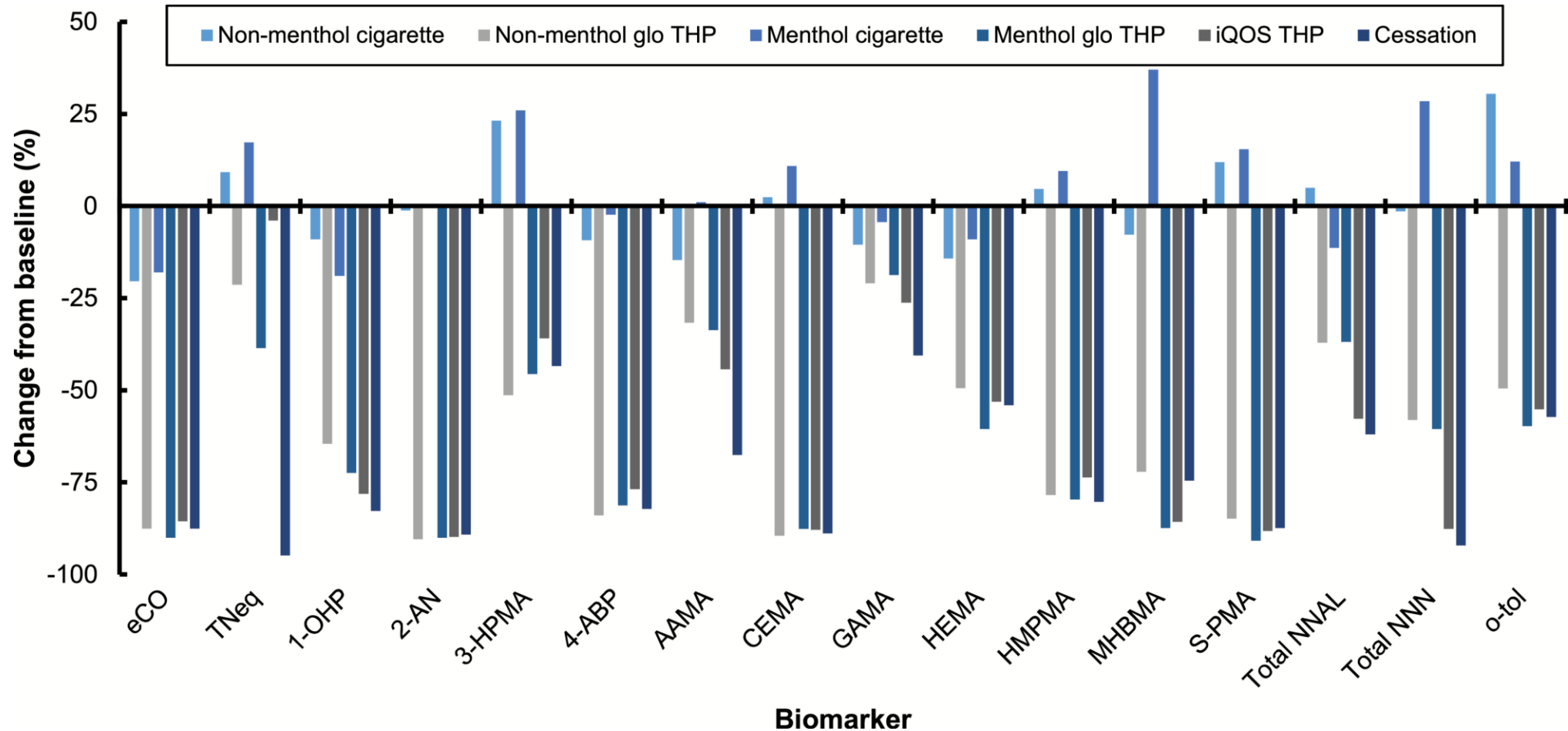


Biomarkers of Exposure Reductions E-cig



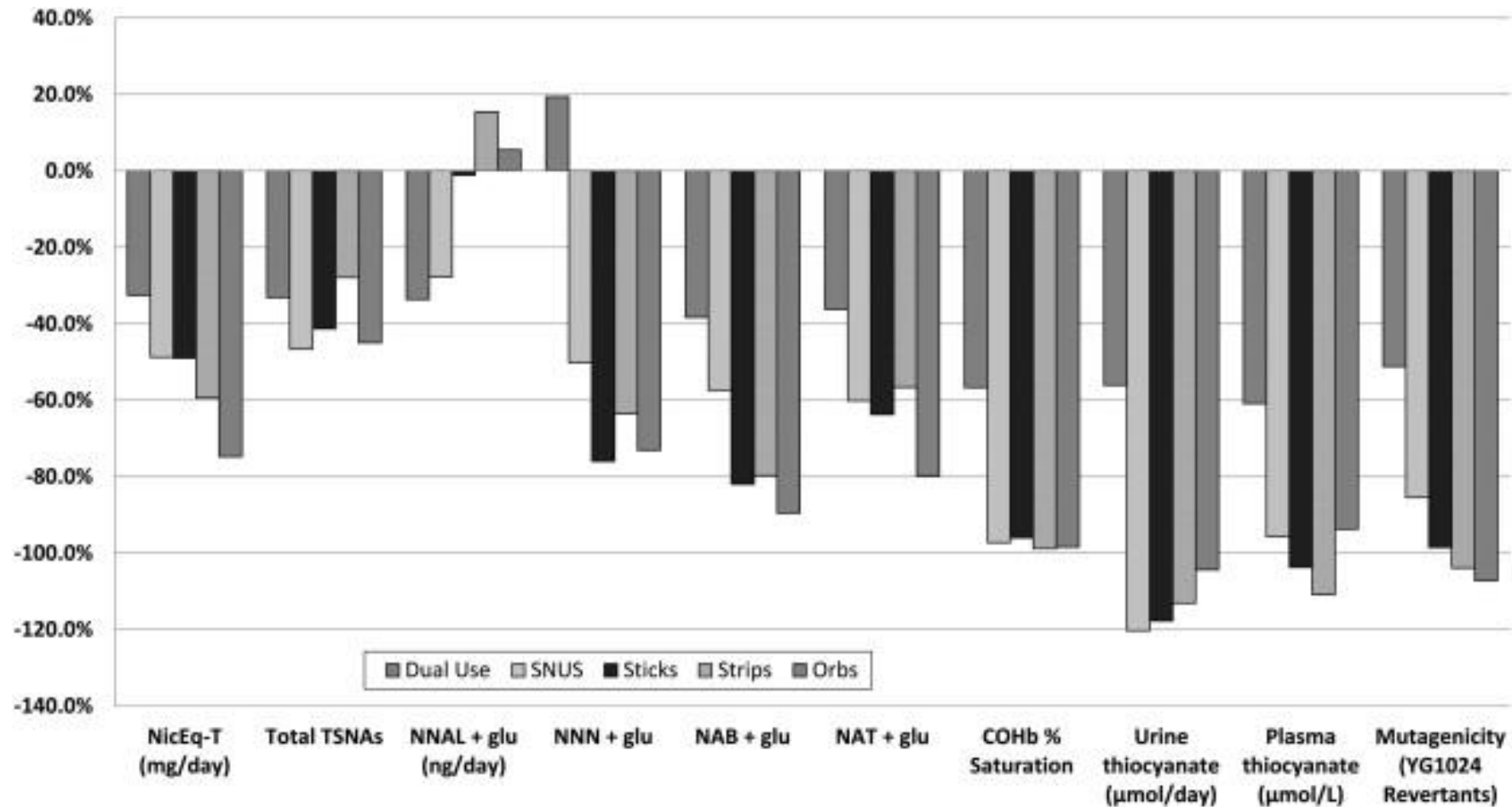
(Shahab et al, 2017)

Biomarkers of Exposure Reduction HNB



(Gale et al 2018)

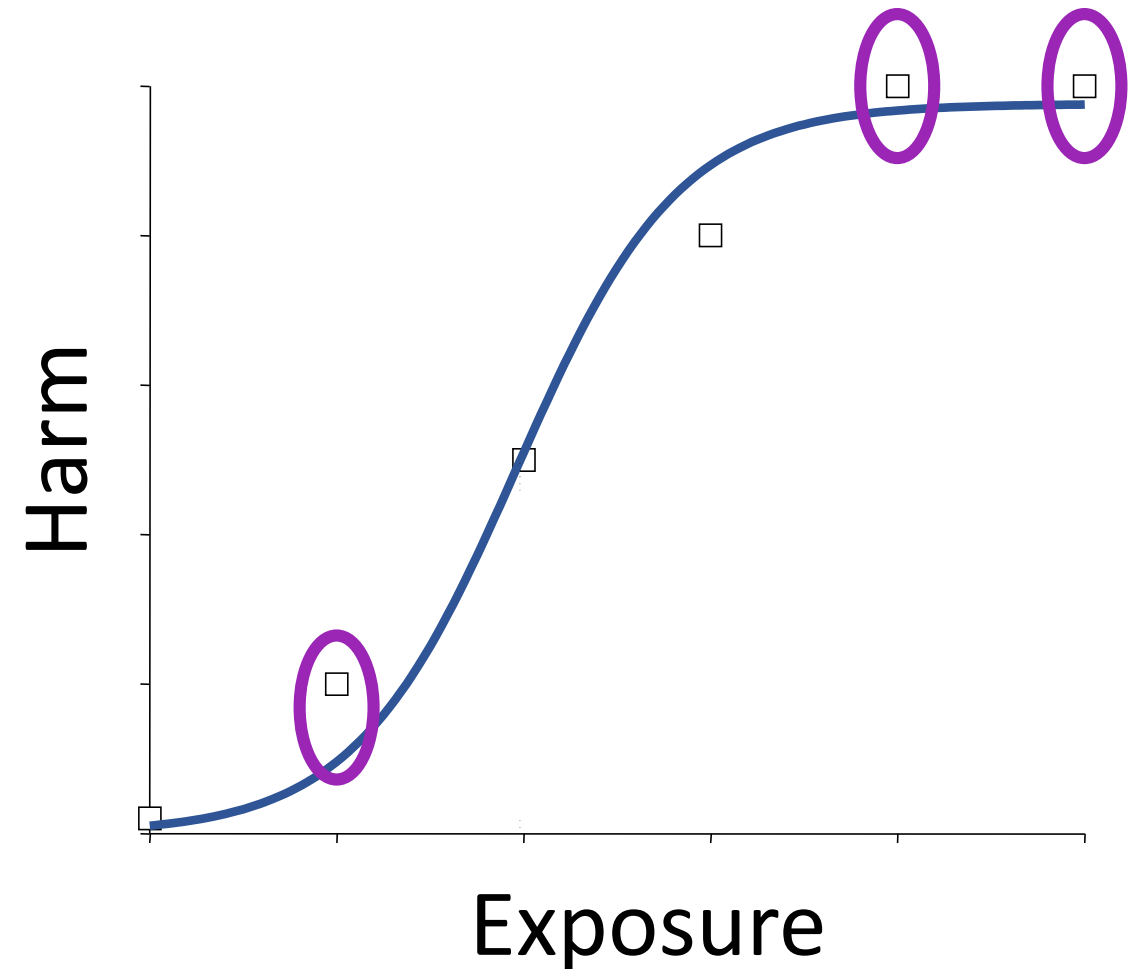
Biomarkers of Exposure Reduction Snus



(Krautter et al, 2015)

Exposure vs Effect

- Reduced exposure does not necessarily mean reduced risk
- Biomarkers of Biological Effect (BoBE)
 - FEV1
 - Nitric Oxide
 - Neutrophils
 - White Blood Cell
 - Lipoproteins
 - Blood Pressure
 - Heart Rate



Biomarkers of Biological Effect

- Can be readily measured in biological samples or physiological tests
 - Are associated with a disease of interest
 - Display a dose-response relationship with exposure
 - Can be differentiated between smokers and non-smokers
 - Reversibility and kinetics with smoking cessation or switching
-
- NASEM recommendations for e-cig research stressed the need for short and long-term cohort studies of subclinical biomarkers and pathways.

Modelling Potential Health Risks

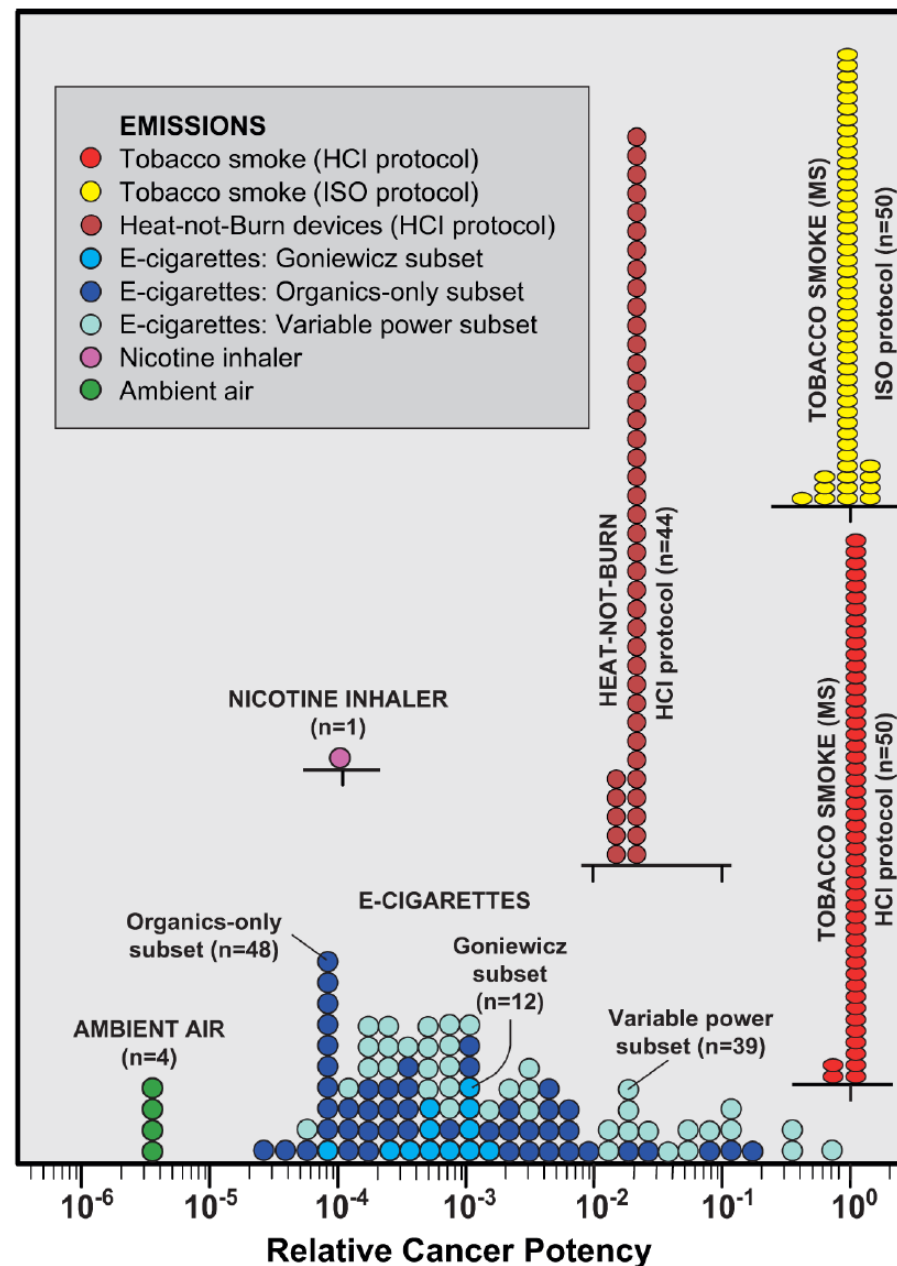
- Quantitative Risk Assessment (QRA)
 - QRA is used by regulatory authorities to estimate potential health risks in the environment and from consumer products. (e.g. EPA, FDA)
 - A formal process by which information about the exposure to and potency of agents is used to calculate a mathematical representation of risk for both cancer and non-cancer endpoints. (i.e. 1 in a Million risk)
 - The use of QRA for tobacco products is relatively new. No formal guidance, protocols or standards.

QRA

$$\text{Risk} = \text{Exposure} \times \text{Potency}$$

- Combines information about emissions, product use topography, constituent potency.
- Allows for comparisons of relative risk between products and classes of products

(Stephens, 2017)

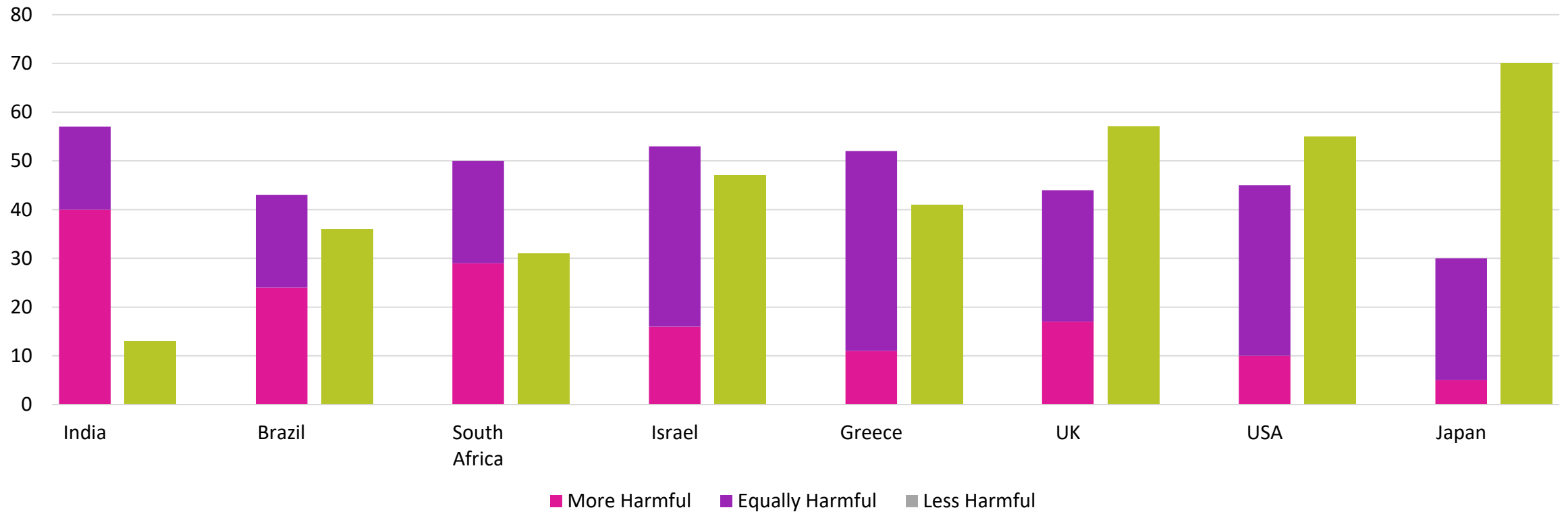


Risk Assessments Inform Decision Making

- Regulatory Agencies
 - FDA
- Government
 - Ministries of Health; Legislative Bodies
- Consumers
 - Ideally risk communication informs personal decision making

Global Perception of ENDS

Do you think using e-cigarettes and vaping devices is more or less harmful than smoking regular cigarettes?



- Smoking is the world's leading preventable cause of death.

... it does not have to be.

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SMOKE-FREE WORLD**

smokefreeworld.org