

HARM REDUCTION IN TOBACCO/NICOTINE USE

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NICOTINE

- Cancerogen?

International Agency for Research on Cancer



English

European Code Against Cancer

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HOME

12 WAYS ▾

ABOUT CANCER ▾

SCIENTIFIC JUSTIFICATION

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12 WAYS TO REDUCE YOUR CANCER RISK

You are here: [Home](#) / [12 ways](#) / [Tobacco](#) / Does nicotine cause cancer...

[Print the Code](#)

Questions & Answers



Tobacco



Second-hand smoke



Healthy body weight



Physical activity



Diet

Does nicotine cause cancer?

No. Nicotine is a common chemical compound found in tobacco plants, and its effect is to make tobacco addictive rather than to cause cancer directly. People who are addicted are more likely to continue to expose themselves to the carcinogens in smoked or smokeless tobacco.

Nicotine at doses found in products such as [nicotine replacement therapy \(NRT\)](#) can gradually replace the need for nicotine in cigarette smokers while minimizing the exposure of users to the carcinogens and other toxic substances in tobacco smoke. Medicinal nicotine is therefore a safer alternative to tobacco products. Nicotine replacement therapy (as gum and patch) is on the World Health Organization list of essential medicines since 2009.

Nicotine in very large doses can be toxic or even lethal and therefore nicotine products should be kept out of the reach of children.

NICOTINE WITHOUT SMOKE

	Nicotine basis	Tobacco basis
Heated	EC – elektronik cigarettes vaping Hundreds of types	heated tobacco PM: IQOS, heets, heat-not-burn BAT: GLO (JT: PLOOM – není v ČR)
Not heated	Nicotine replacement therapy Nicotine pouches	Moist snuff Snus (Sweden)

E-CIGARETTES

... ARE NOT SMOKED!!!

E-CIGARETTES/VAPING

+ PLUS

- No burning, smoke, thousands of chemicals
- No toxic waste - butts
- No fire cause
- Almost zero risk of passive smoking / environment

- MINUS

- Keeping/maintaining/starting the dependence
- False impression “smoking is safe”
- Aromatic taste that children like
- No reasonable regulation, not clear content

EC

- Heated:
- Glycerine
- Propylene-glycol
- Nicotine (mostly)

QUESTIONS:

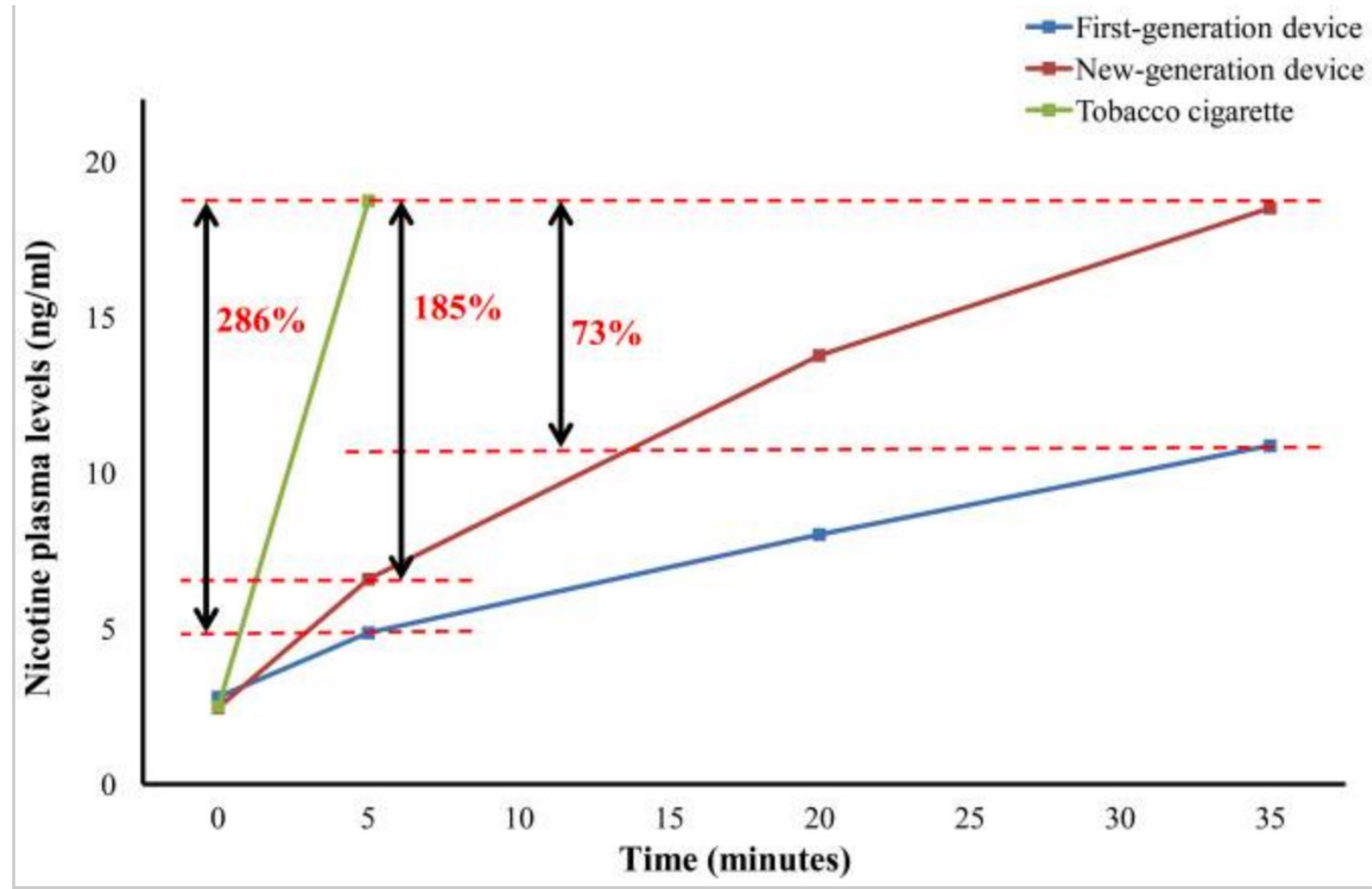
- Can EC lead to smoking, mainly in children?
- Can secondhand vapor damage?
- Can EC help to stop smoking?

E-CIGARETTES AND SMOKING CESSATION

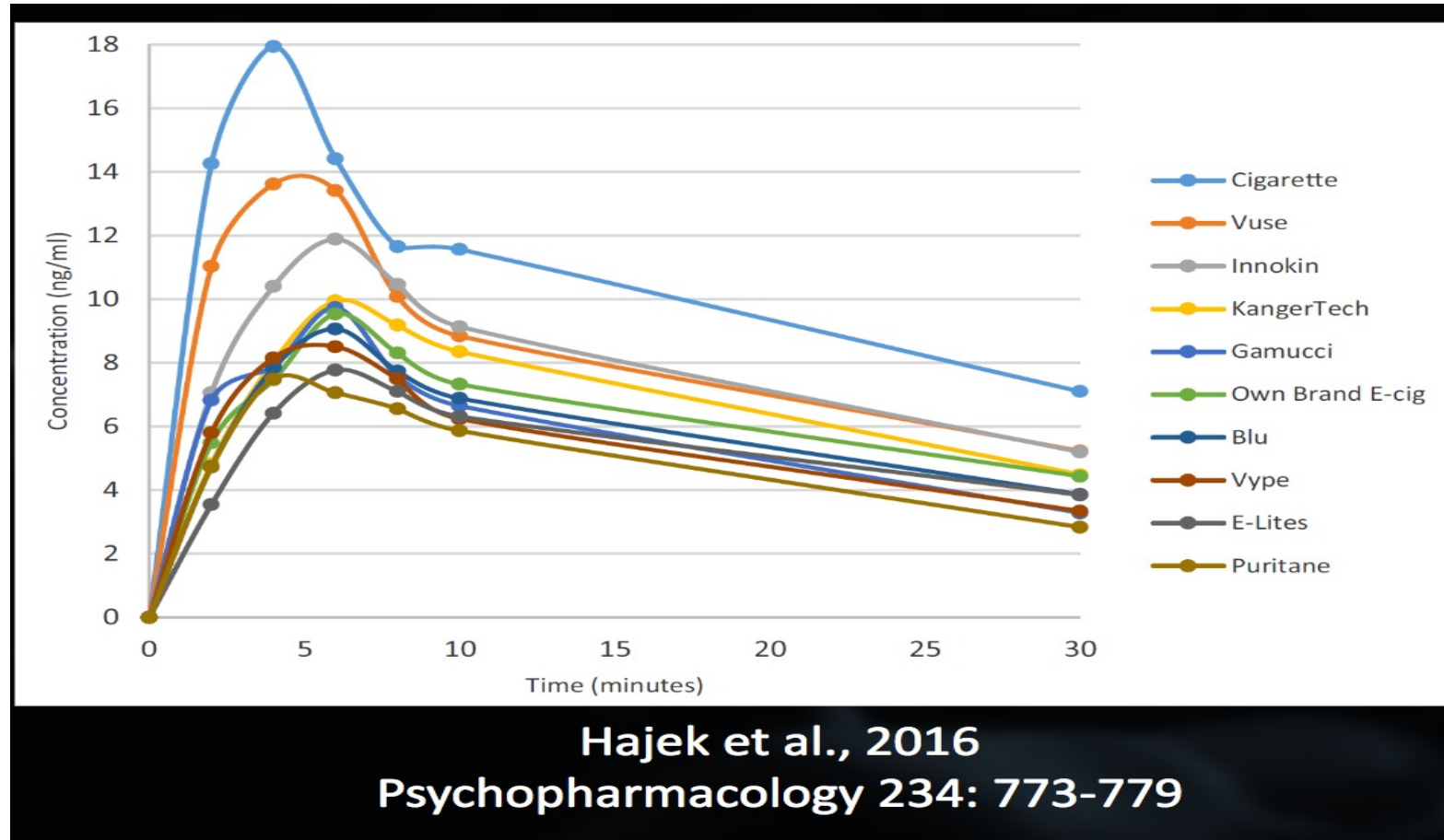
- Few studies: they can help
- Mostly those **not ciga-like**
- Not a recommended treatment (second-line in UK)
- BUT: if the patient did not stop with the evidence-based treatment, EC is better alternative to smoking

= **harm reduction**

PLASMA NICOTINE



PLASMA NICOTINE



**MOIST SNUFF
SNUS**

MOIST SNUFF - SNUS

Moist snuff banned in EU

Snus: specific form of moist snuff with very low tobacco specific nitrosamines

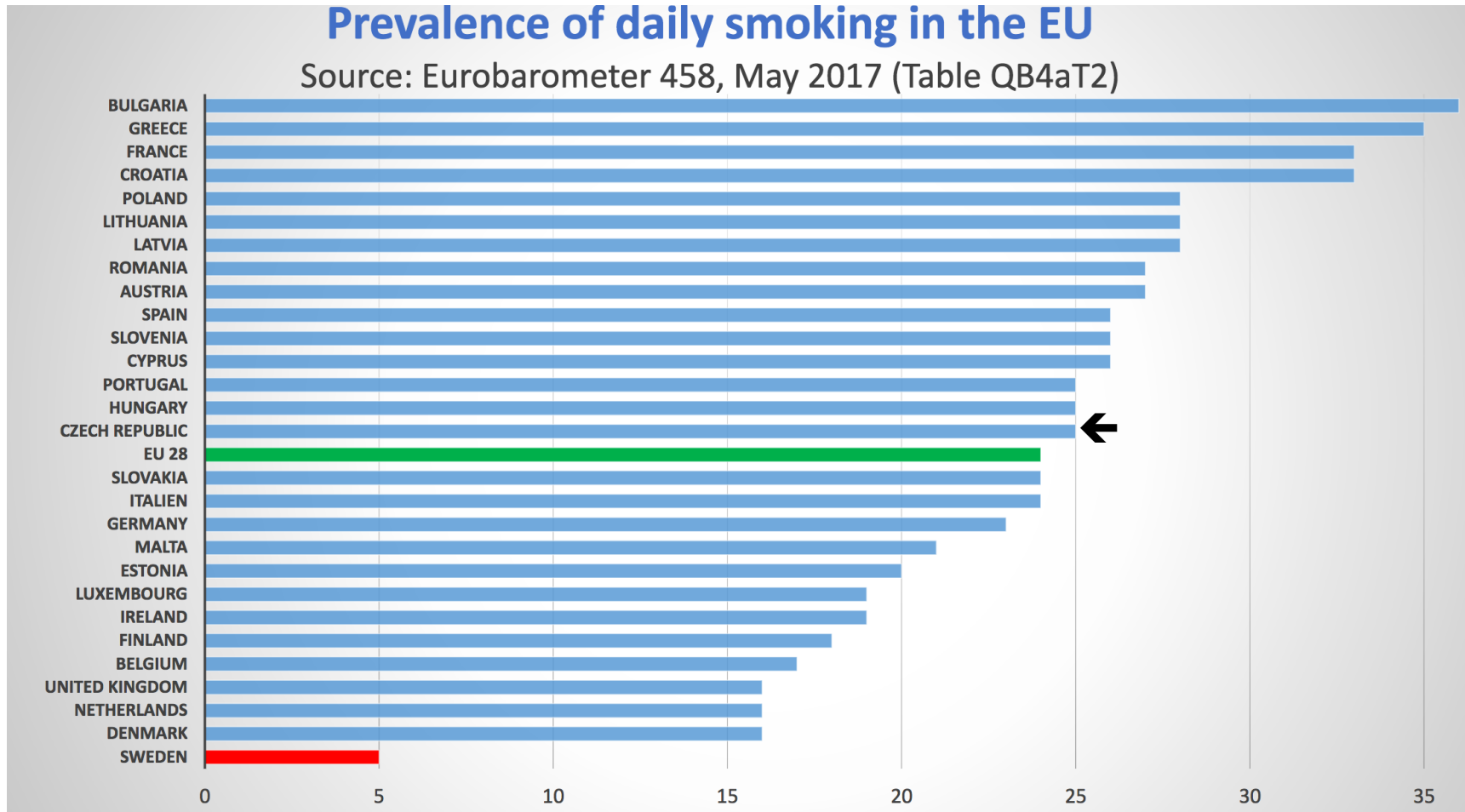
Exception: Sweden, over 20 % use snus

(other forms of oral tobacco may be carcinogenic and toxic, esp. in Asia)

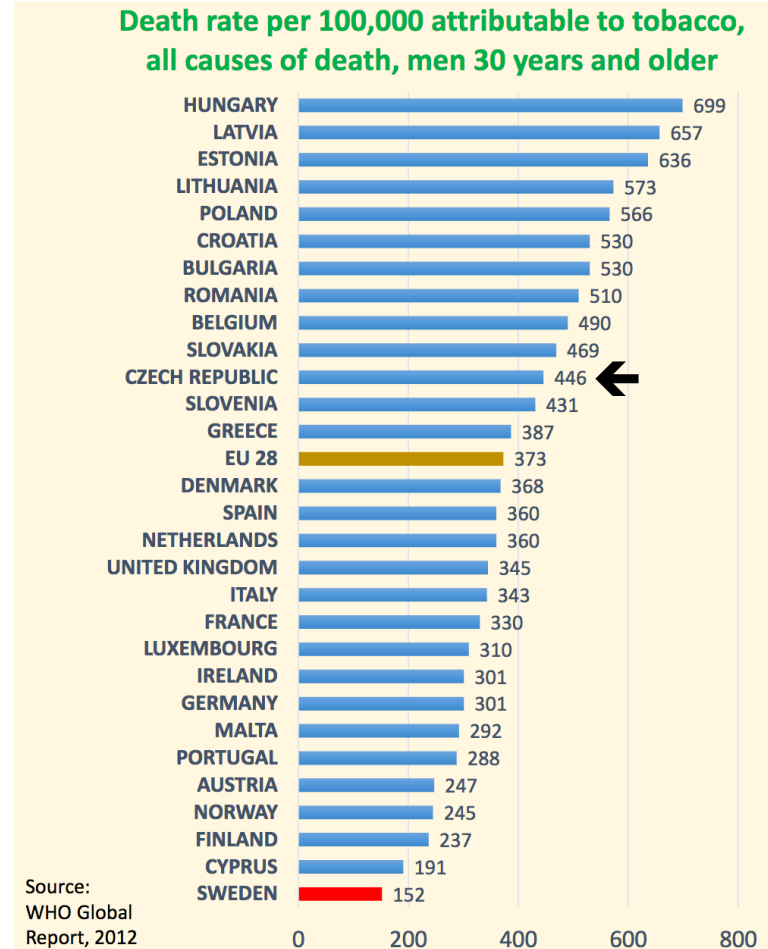
SNUS



SMOKING PREVALENCE, EUROPE



DEATHS FROM SMOKING, EUROPE



NICOTINE POUCHES

- **MOP** = „Modern“ Oral Products, contain nicotine (or not) without tobacco
similar to **snus**
- **composition:** nicotine powder (from tobacco or synthetic), grade fillers, water, salt, flavorings, pH
- Different flavors, different nicotine content (mostly **2-24 mg/gram**)
- Nice package, visually attractive
- **USA** - **warning** This product contains nicotine. Nicotine is addictive substance. Age restriction – 21 yrs.
- **EU** – **no regulation**, no health warning

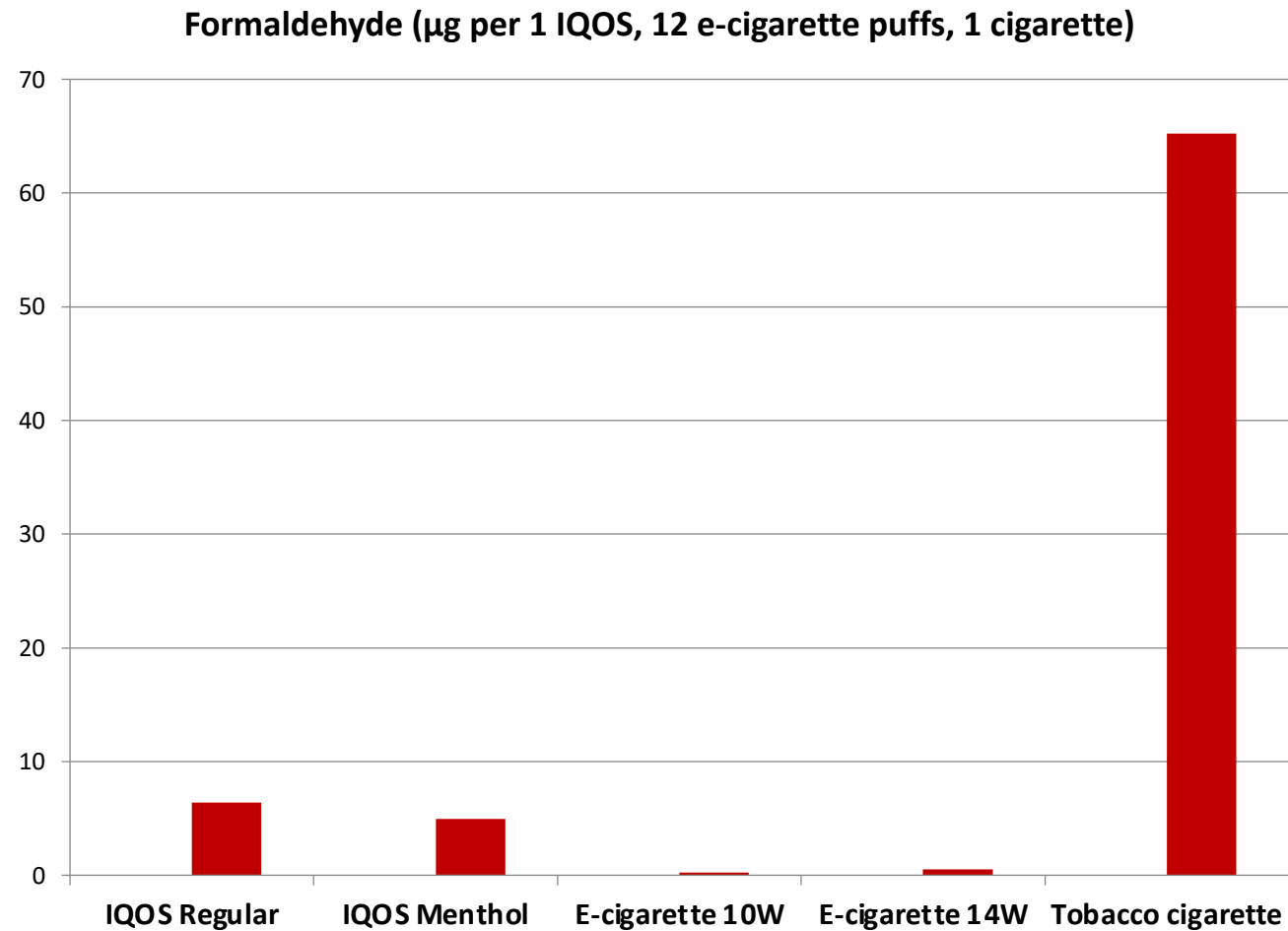
HEATED TOBACCO

HEATED TOBACCO x CIGARETTE: MOSTLY LESS, BUT SOME MORE TOXIC CHEMICALS

Analyzed Compound	HNB Cigarette		Conventional Cigarette		Proportion of the Chemical in HNB and Conventional Cigarettes, %
	Amount, Mean (SD)	No. of Replications for Each Assay	Amount, Mean (SD)	No. of Replications for Each Assay	
Volatile organic compounds, µg per cigarette ^a					
Acetaldehyde	133 (35)	5	610 ^b	1	22
Acetone	12.0 (12.9)	5	95.5 (13.5)	2	13
Acroleine	0.9 (0.6)	2	1.1	1	82
Benzaldehyde	1.2 (1.4)	5	2.4 (2.6)	2	50
Crotonaldehyde	0.7 (0.9)	5	17.4	1	4
Formaldehyde	3.2 (2.7)	5	4.3 (0.4)	2	74
Isovaleraldehyde	3.5 (3.1)	5	8.5 (10.8)	2	41
Propionaldehyde	7.8 (4.3)	5	29.6 (36.6)	2	26

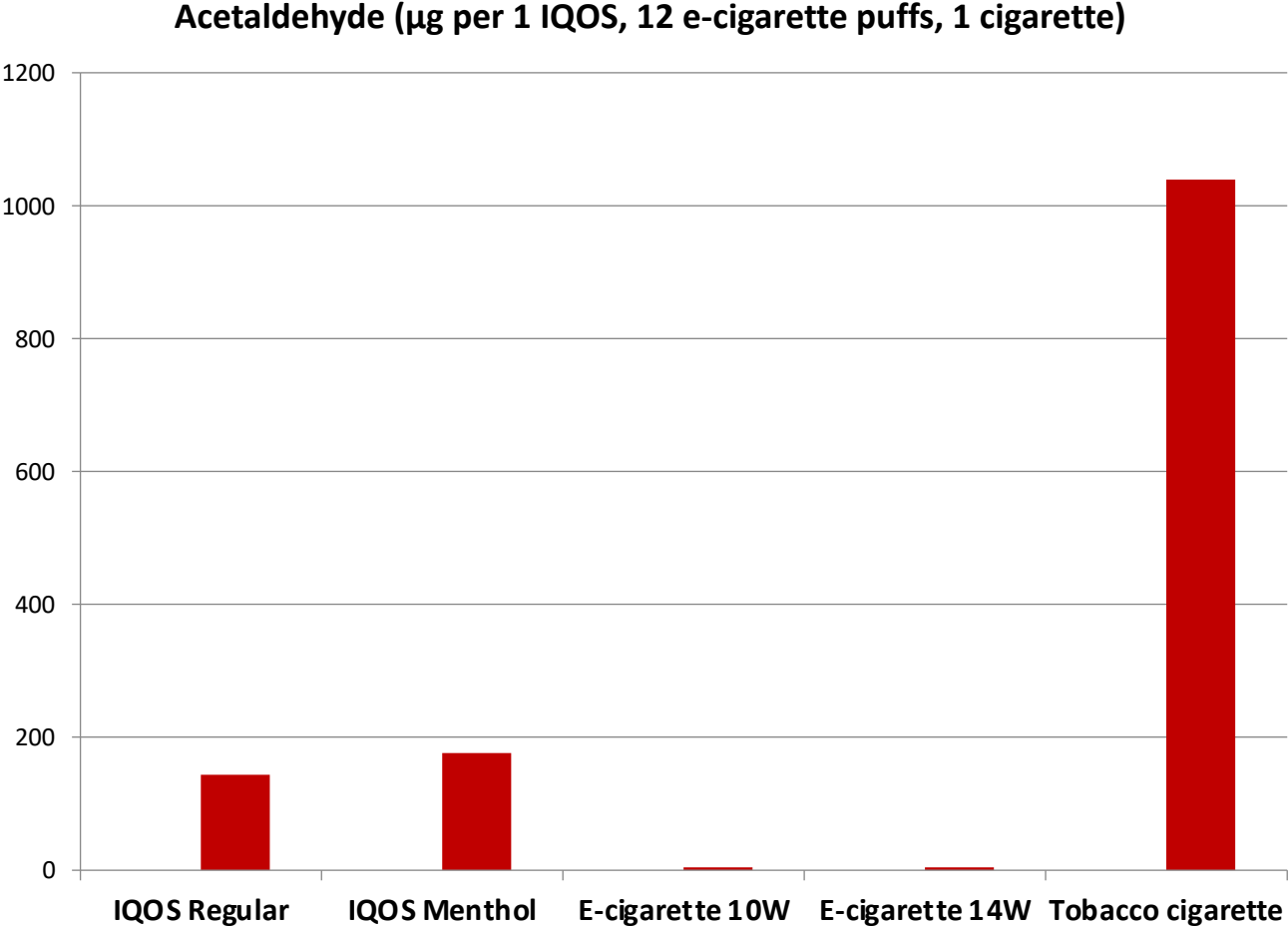
Auer et al. JAMA Intern Med 2017

FORMALDEHYDE (iQOS, EC, CIGARETTE)



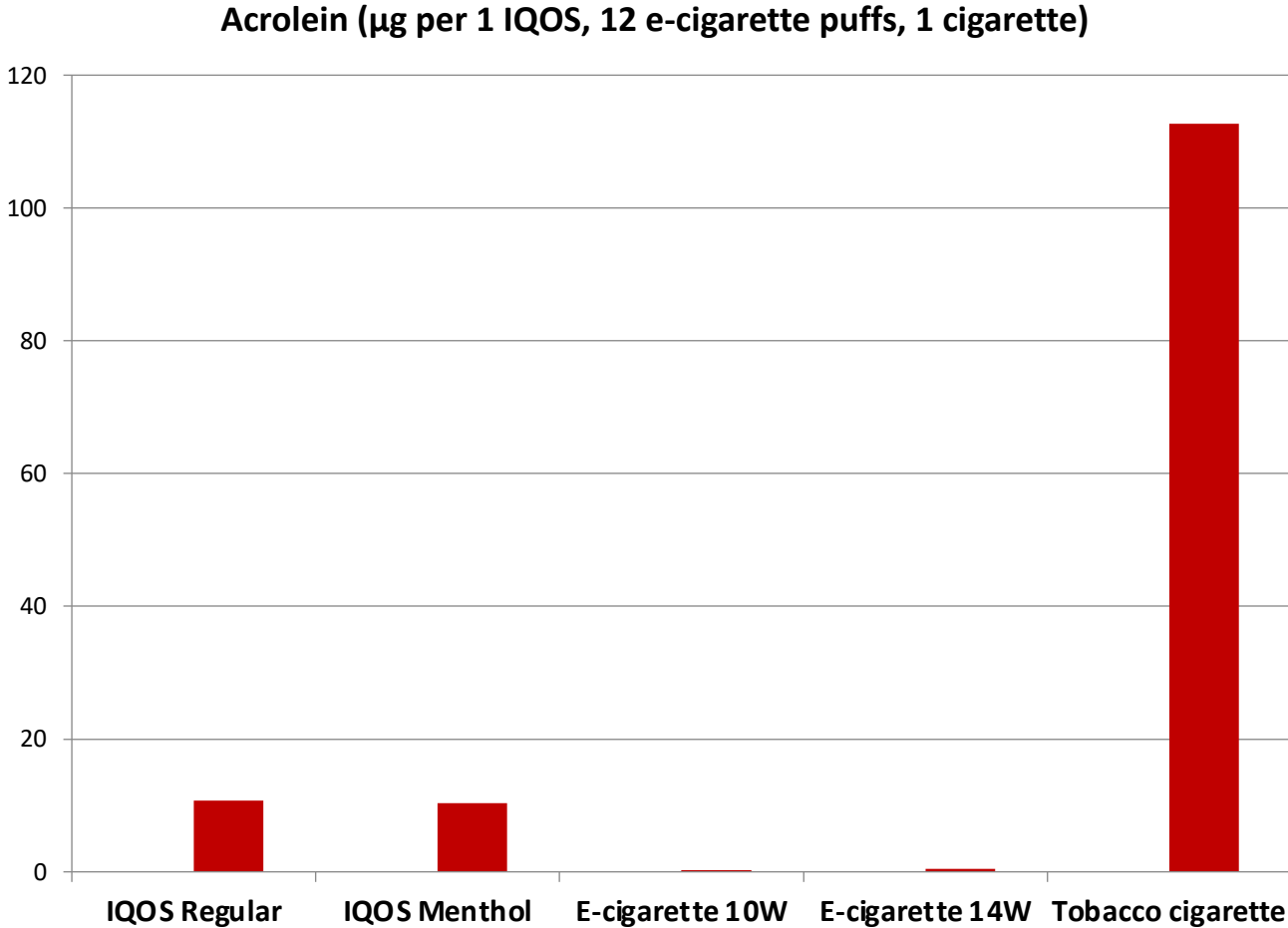
Farsalinos, Leischow et al. under preparation for submission

ACETALDEHYDE (iQOS, EC, CIGARETTE)



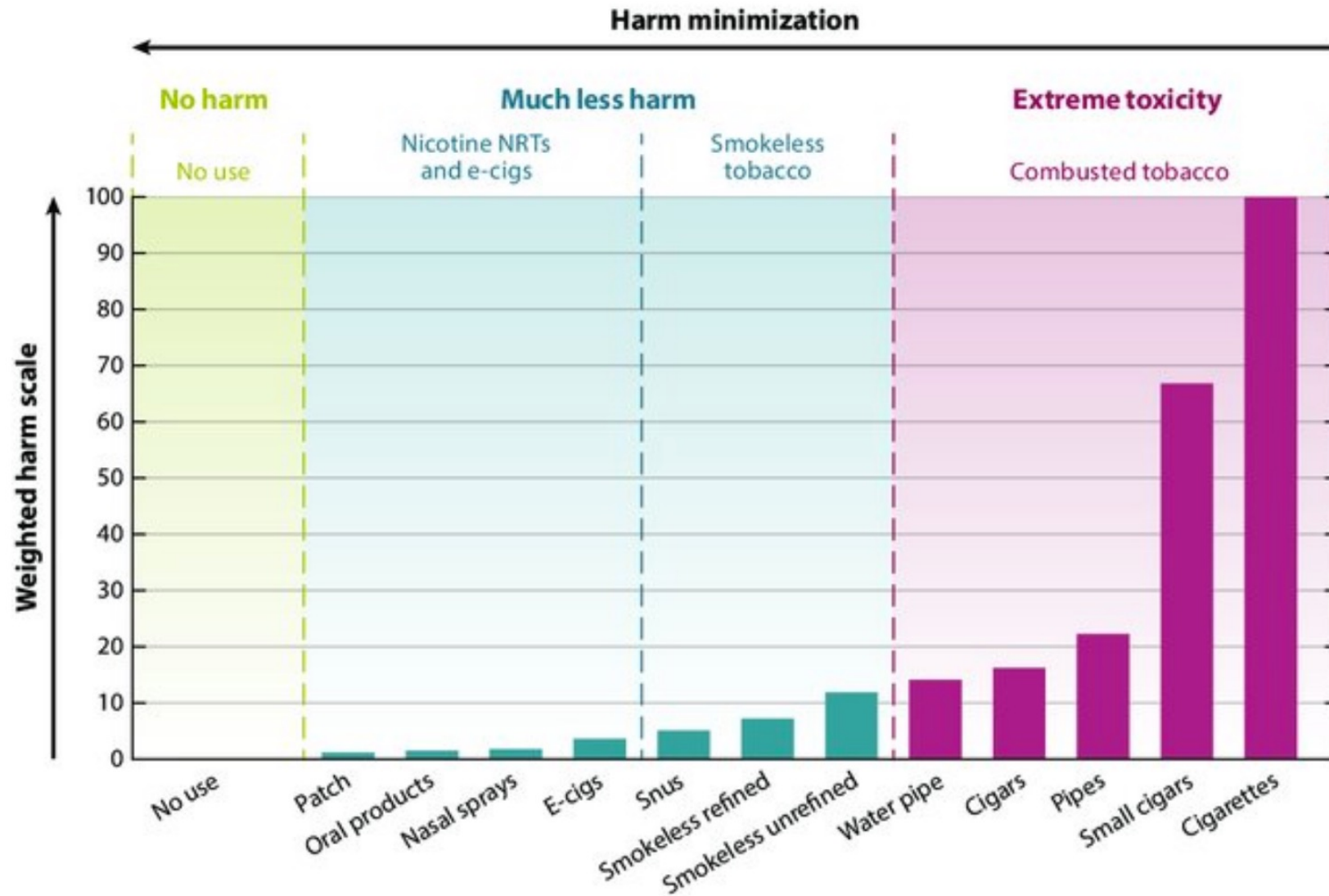
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AKROLEIN ((IQOS, EC, CIGARETTE))



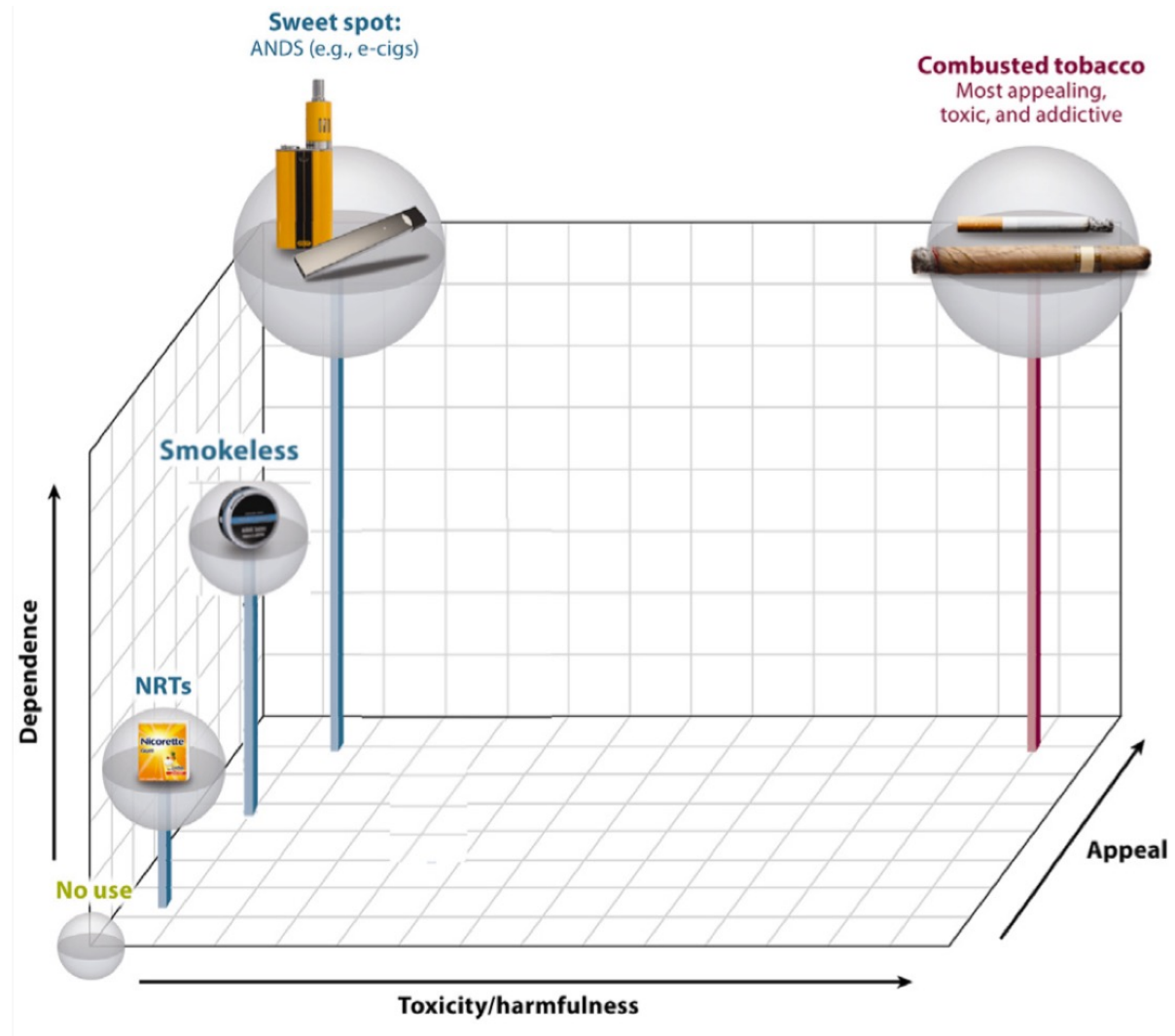
Farsalinos, Leischow et al. under preparation for submission

RISK ASSESSMENT



HEALTH RISK, DEPENDENCE, APPEAL

Abrams et al 2018



HARM REDUCTION

~~HEALTHIER~~

**LOWER RISK, LESS DANGEROUS, LESS
TOXIC**

BENEFIT NIKOTINU BEZ KOUŘE PŘEVAŽUJE RIZIKA

**Replacement of nicotine
from smoke,
Cessation help**



**New dependent users,
children, adolescents**

Not after exclusion of confounding
factors

NO NICOTINE CAN BE
RECOMMENDED TO
NONSMOKERS/NON-
DEPENDENT INCLUDING
CHILDREN

THANKS FOR YOUR ATTENTION
PAID TO SMOKING OF YOUR
PATIENTS

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