



**ISPRO**

Istituto per lo studio, la prevenzione  
e la rete oncologica



# Aggiornamenti su sigaretta elettronica (e-cig) e tabacco riscaldato (HTP)

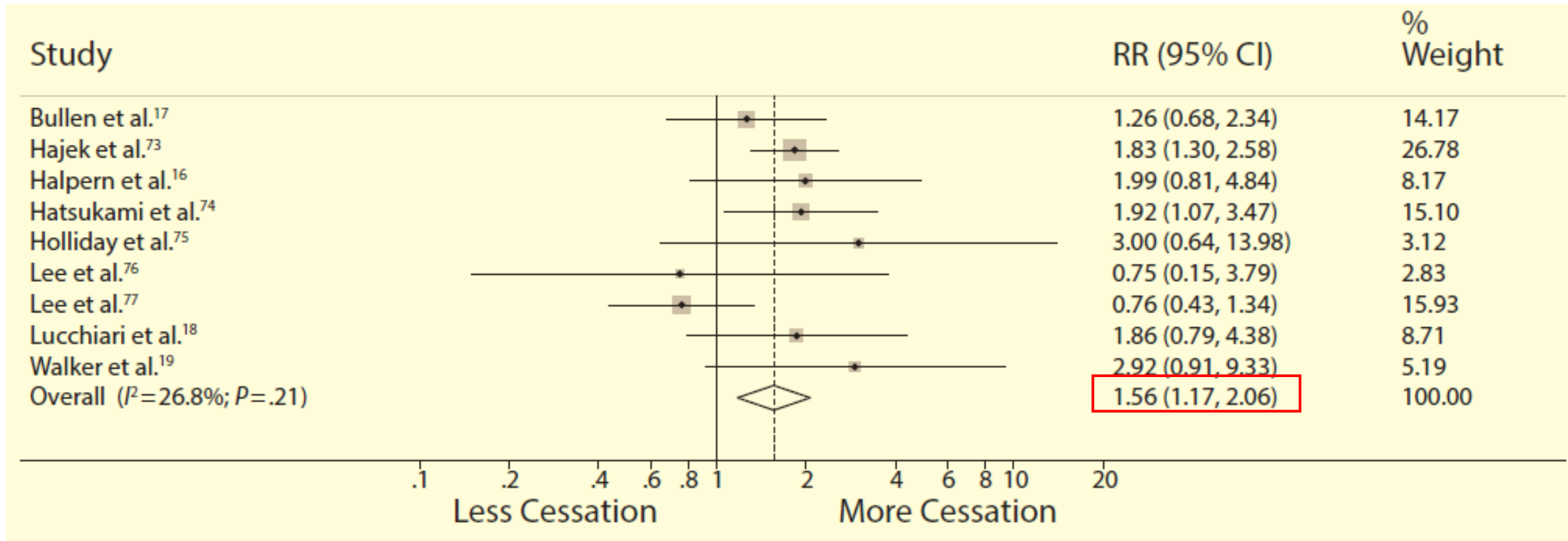
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Gorini G. Review of: "Effectiveness of e-cigarettes as aids for smoking cessation: evidence from the PATH Study cohort, 2017– 2019". March 4, 2022 Qeios ID: 1KNGWJ

(<https://doi.org/10.32388/1KNGWJ>); (<https://www.qeios.com/read/1KNGWJ/pdf>)

# RCTs: Association of e-cig use with smoking cessation (clinical setting)



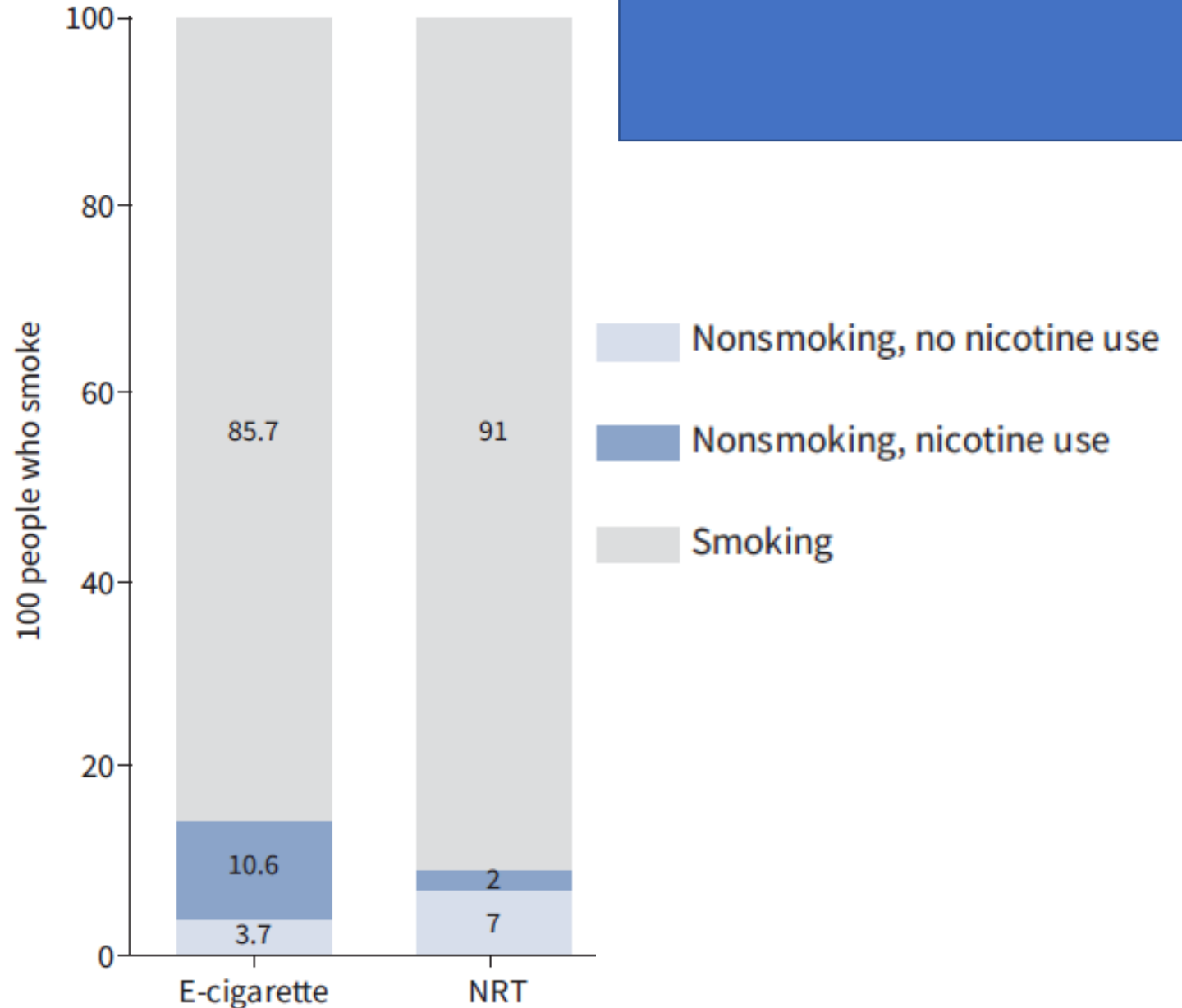
[Wang, AJPH 2021; Hartmann-Boyce, 2021]

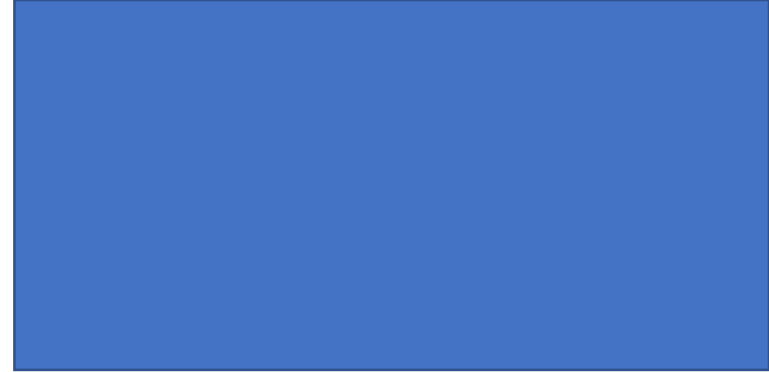
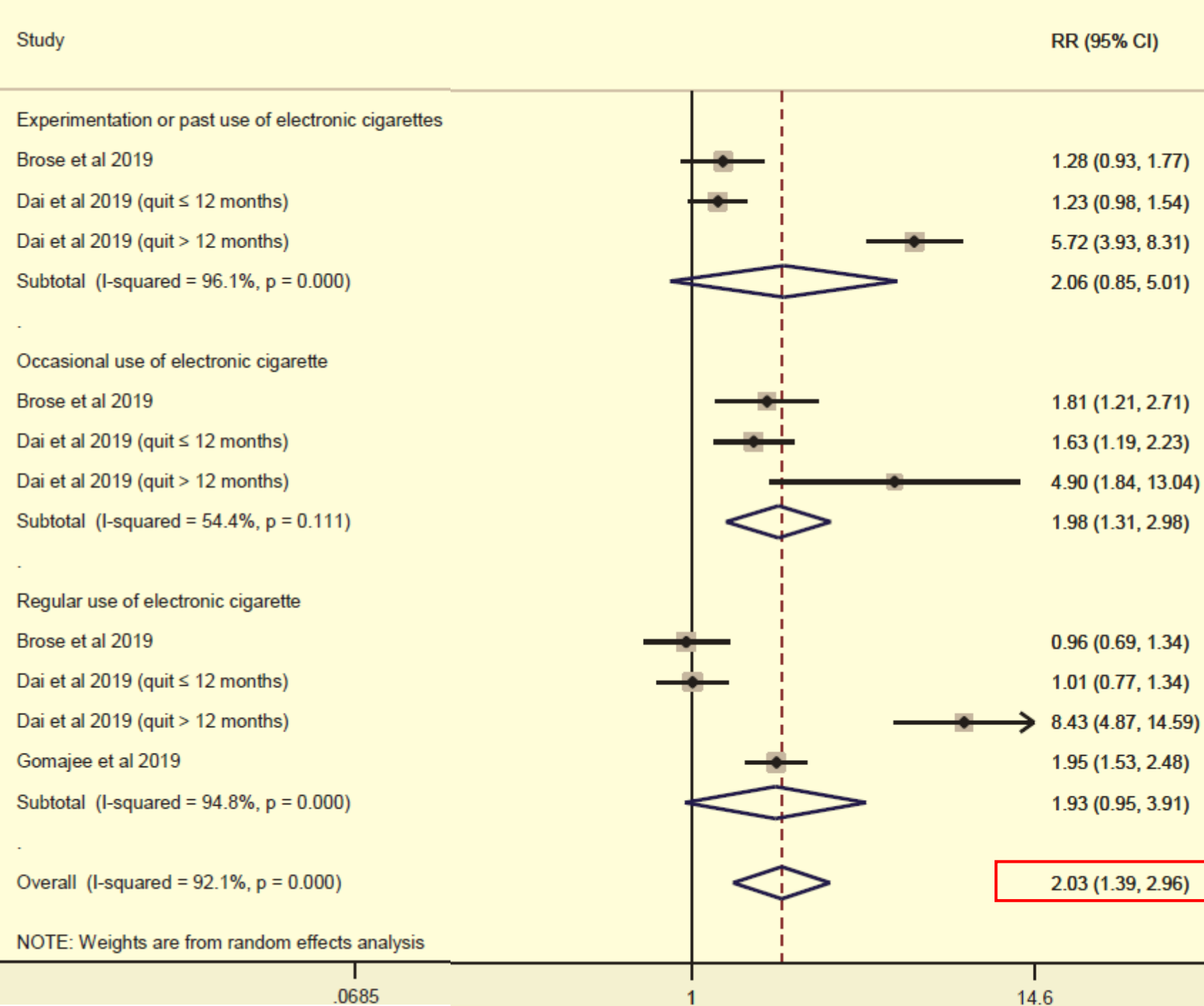
# E-cig & nicotine abstinence: meta-analysis from RCTs

E-cig vs NRT  
Outcome: Nicotine abstinence  
3,5% vs 7.1%  
Risk Ratio = 0.50 (p<0.05)

E-cig vs NRT  
Outcome: e-cig or NRT use in successful quitters:  
7.2% vs 0.7%  
Risk Ratio = 8.94 (p<0.05)

[Hanewinkel, Eur Resp Rev 2022]



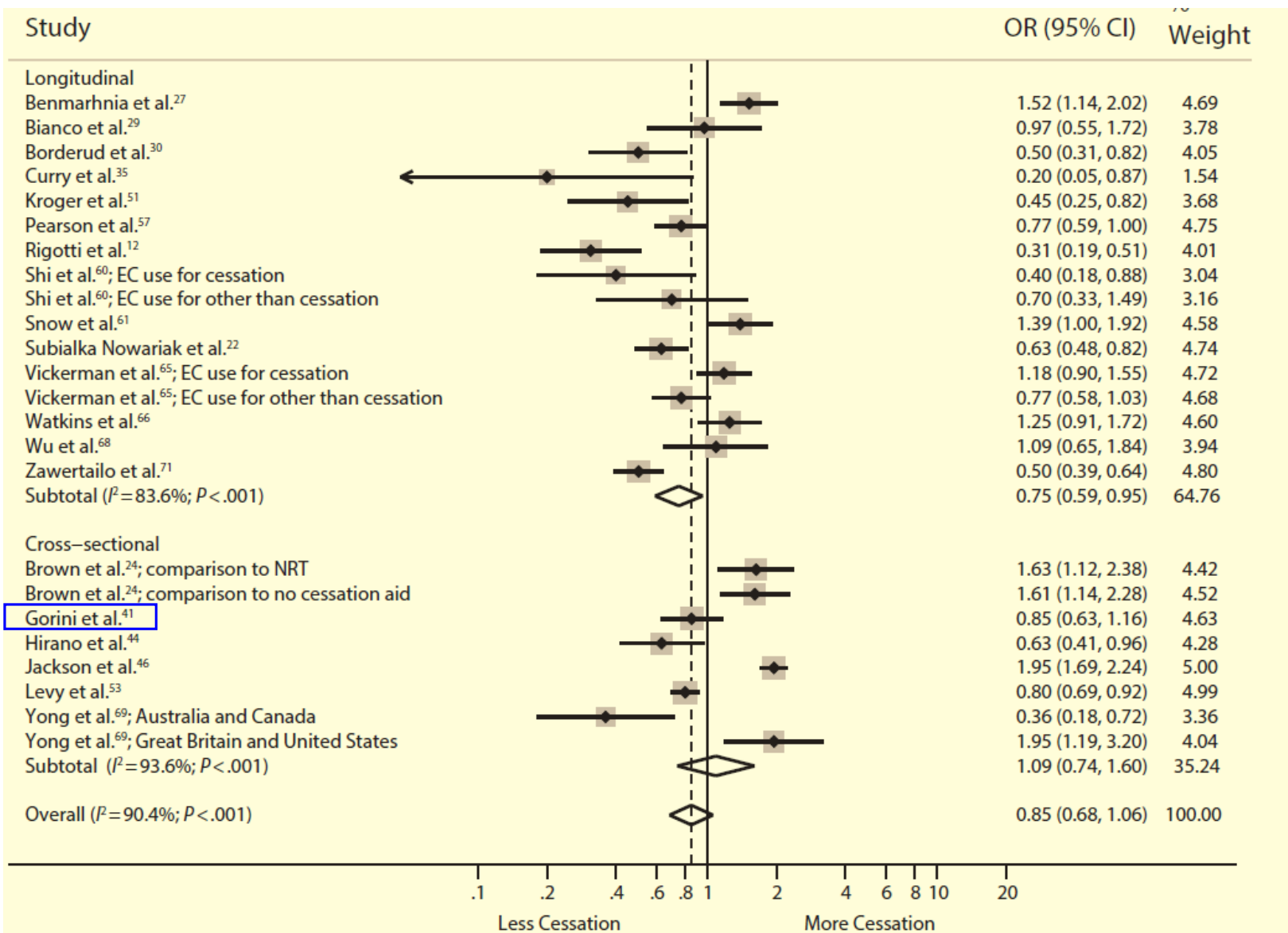


Meta-analisi sul rischio di ricaduta in ex-fumatori che utilizzano e-cig

6 RCTs

- Rischio doppio

# Association of e-cigarette consumer product use with smoking cessation among people with some motivation to quit



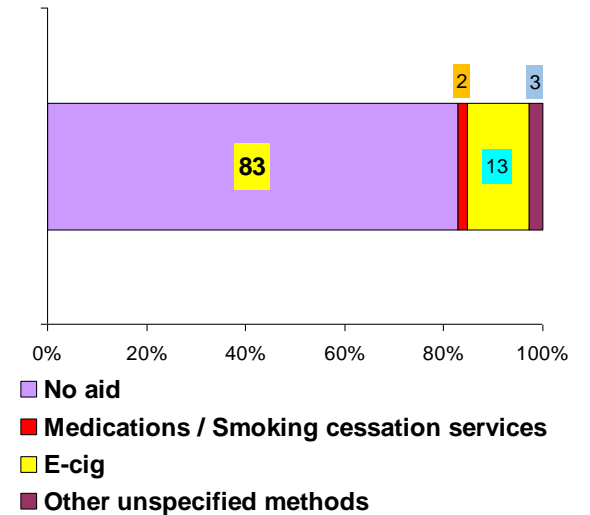
[Wang, AJPH 2021 (meta-analisi);  
Chen, Tob Control, 2022 (PATH  
study)]

# Update of analysis PASSI 2014-2015 with PASSI 2014-2020

## - Successful quit attempts

	<b>Success, N (%)</b>	<b>Fail, N (%)</b>	<b>Adj PR (95% CI) §</b>
Total	1883 (10.1)	16000 (89.9)	
<i>Type of aid</i>			
No aid	1,479 (9.7)	13,309 (90.3)	1*
E-cig	241 (11.3)	1,919 (88.7)	1.06 (0.90-1.24)
Medications / CAF	66 (16.1)	320 (83.9)	<b>1.46 (1.11-1.91)</b>
Other unspecified methods	47 (11.2)	435 (88.8)	0.90 (0.63-1.28)

§ adjusted for age, sex, year, education, macro-area, type of smokers



# Cardiovascular (CV) effects of e-cig

## Nicotine & Particulate Matter (PM)

- **Acute haemodynamic effects through sympathetic nerve activation**: increase of heart rate; systolic & diastolic blood pressure
- **Oxidative stress**: increase of reactive oxygen species (ROS); decrease antioxidant activity, increasing atherosclerotic risk
- **Increase of endothelial dysfunction**: arterial stiffness; vascular inflammatory markers, morphological alterations of endothelial cells
- **Platelet activation**
- PM from ambient air pollution and tobacco smoking: higher risk of CV mortality (acute myocardial infarction)

Dual use of tobacco cigarettes & e-cig is associated with a significant increased CVD risk, and did not differ from that among those exclusively smoking tobacco cigarettes

*E-cig should not be regarded as a CV safe product*

*Given the non-linear dose-response relationship between smoking and CV risk & mortality, increasing e-cig use & decreasing smoking may not result in proportional harm reduction of CV mortality*

# Youths & E-cigs

Meta-analysis: youth and young adult e-cigarette users had a 3-time risk of subsequent cigarette initiation and a 4-time risk of past 30-day cigarette smoking

Have e-cigs **renormalized youth smoking** (i.e., e-cigs determine an increase of tobacco users)?

3 studies from NZ, USA, and UK did not support this hypothesis. E-cigs might be **displacing smoking** (“sostituire il fumare”), diverting adolescents from tobacco cigarettes.

There are no studies for EU countries on renormalization vs displacement of smoking: there is the need to carry out analyses on repeated cross-sectional studies

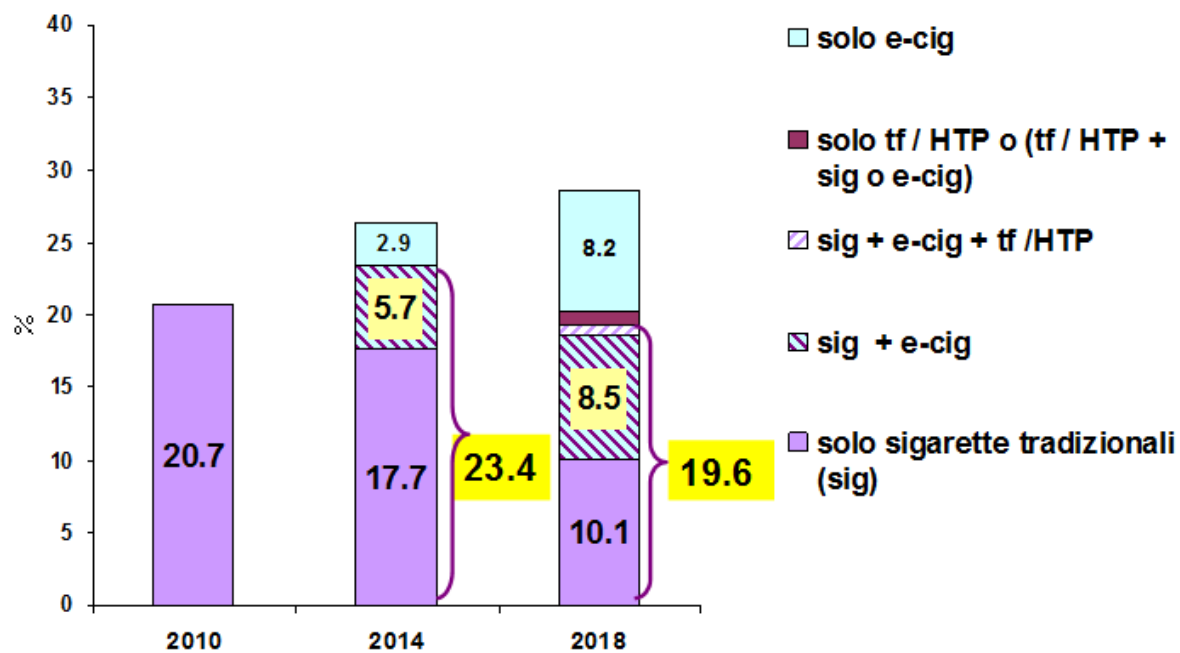
[Soneji, JAMA Pediatr, 2017; Walker, Lancet Public Health, 2020; Foxon, Addiction, 2020; Hallingberg, Tob Control, 2020]



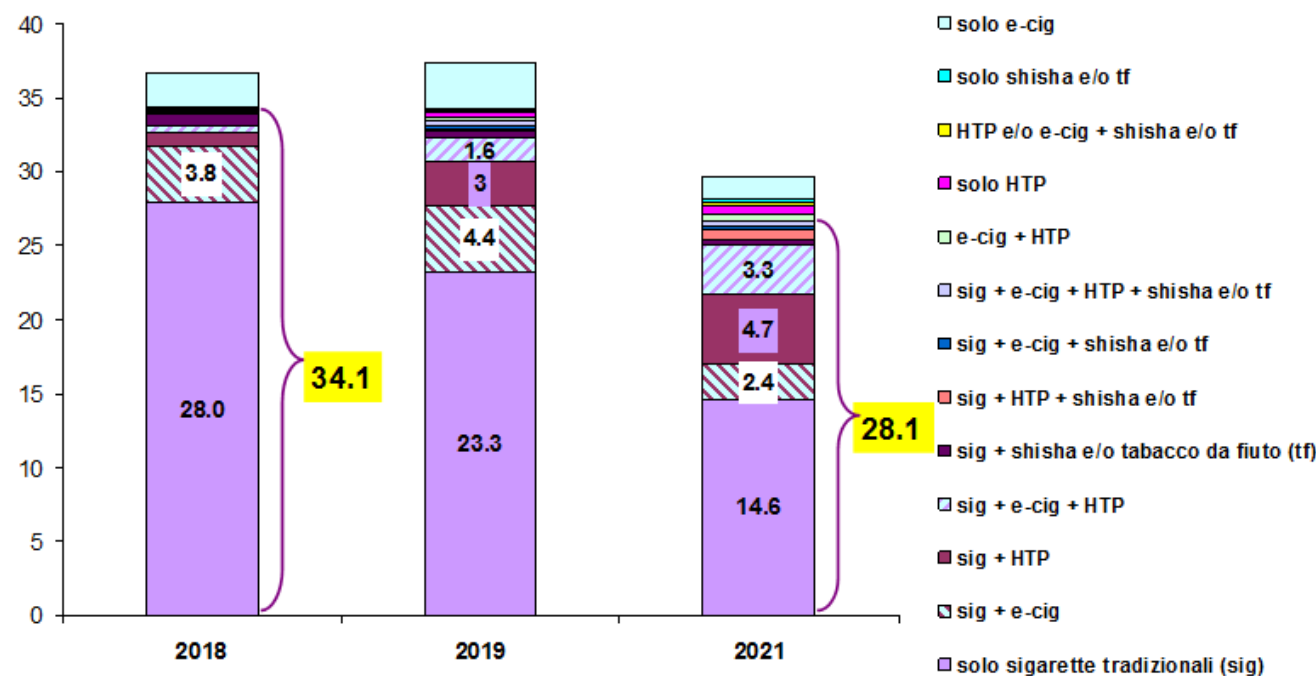
# Current e-cig use in adolescents, Italy, 2010-2021

current smokers: 23.4% in 2014, 19.6% in 2018  
 current e-cig users: 8.4% in 2014, 17.5% in 2018  
 current tf/HTP users : 1.7% in 2018

current smokers: 34.1% in 2018, 27.0% in 2021  
 current e-cig users: 6.8% in 2018, 8.2% in 2021  
 current HTP users: 1.6% in 2018, 10.1% in 2021

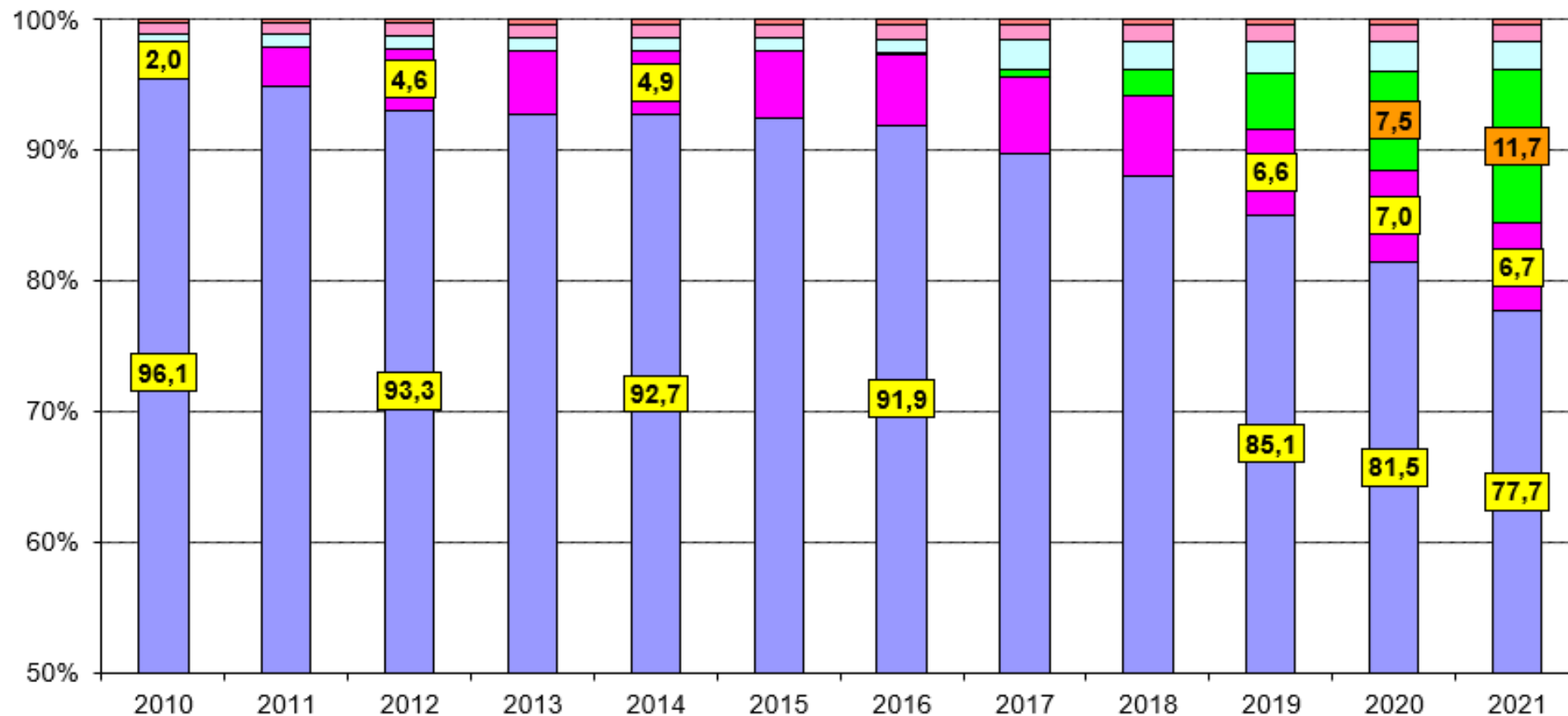


GYTS, 13-15 years, 2010-2018



ESPAD®Italia, 15-19 years, 2018-2021

# Market share, consumption of tobacco products, Italy, 2010-2021 (no data on e-cigs)

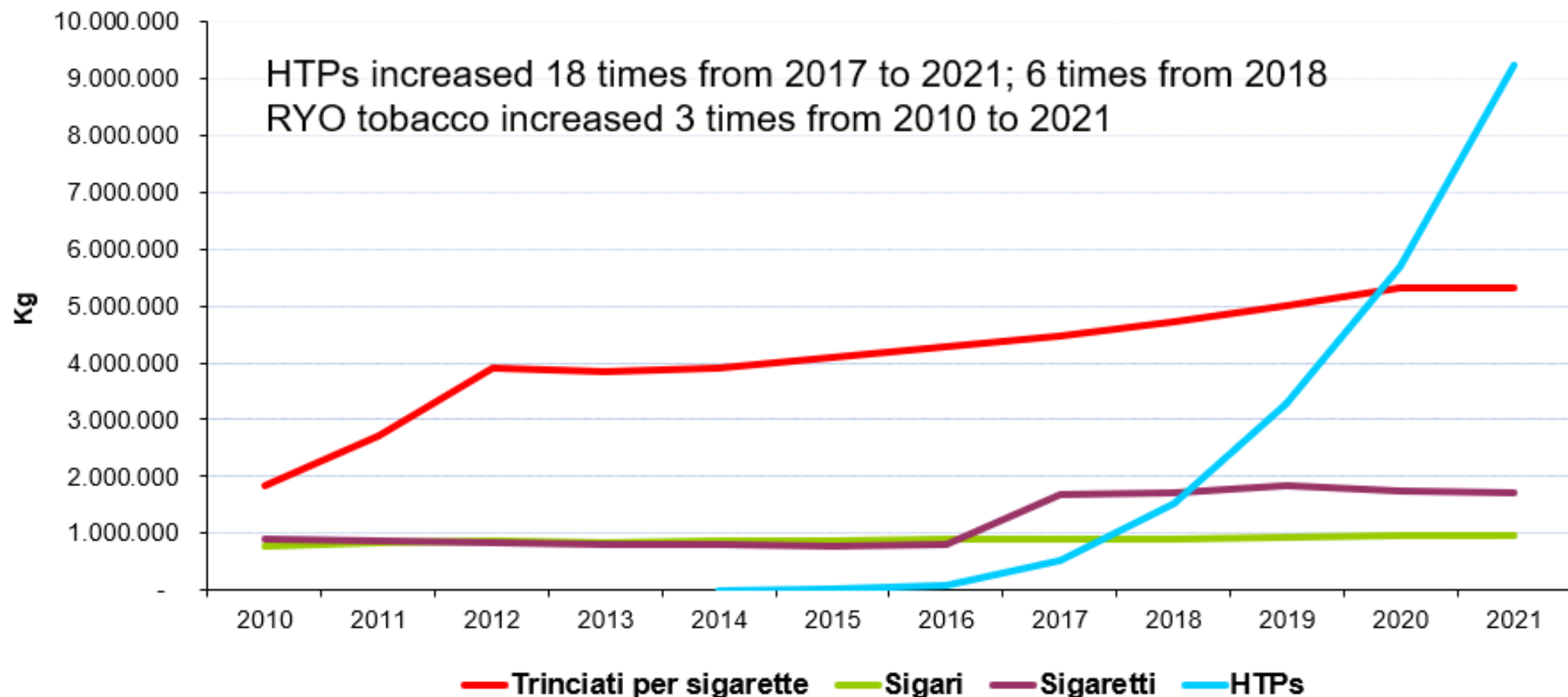


2021  
 HTPs: 9.2 tonnes  
 RYO: 5.3 tonnes  
 tob cig: 61.2 tonnes, a  
 30% decrease from  
 2010

[dati per gentile concessione del Ministero della Salute]

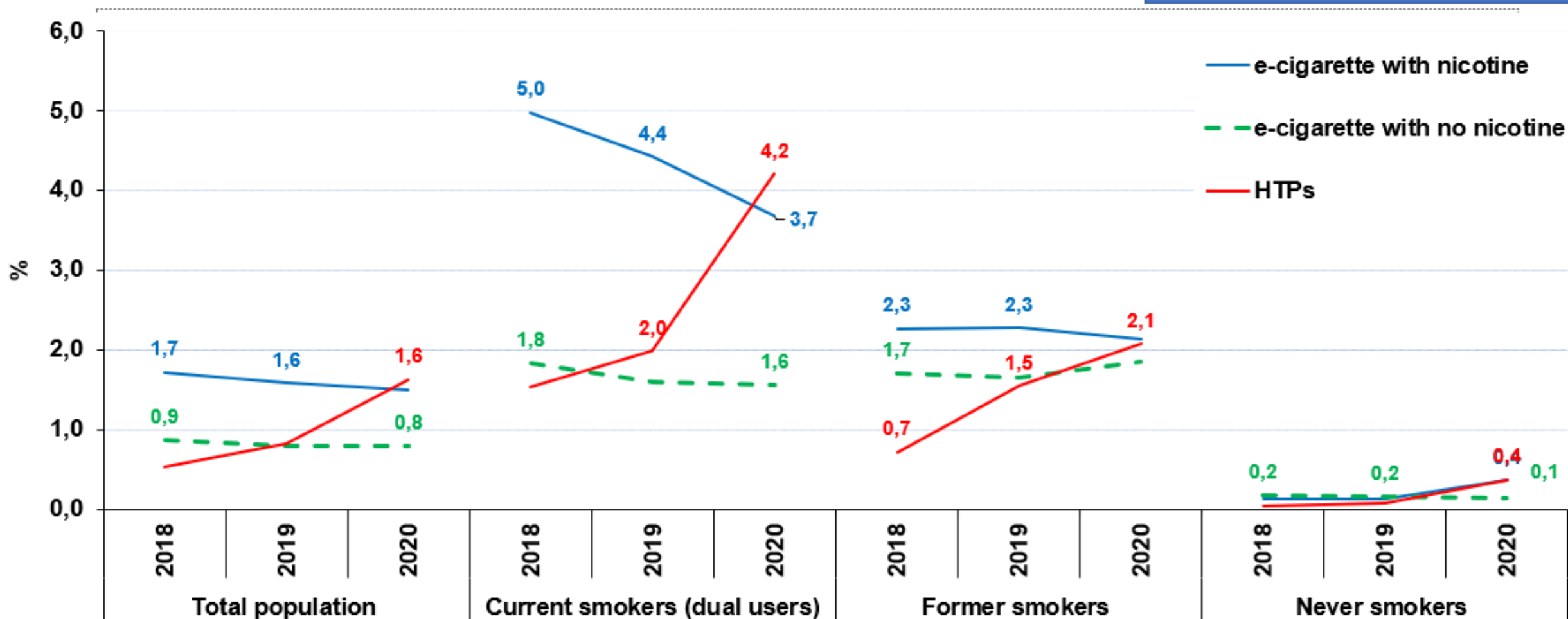
■ Sigarette ■ Trinciati per sigarette ■ HTPs ■ Sigaretti ■ Sigari ■ Altri prodotti (fiuto e mastico; trinciati per pipa)

# Increase of consumption of HTPs, Italy

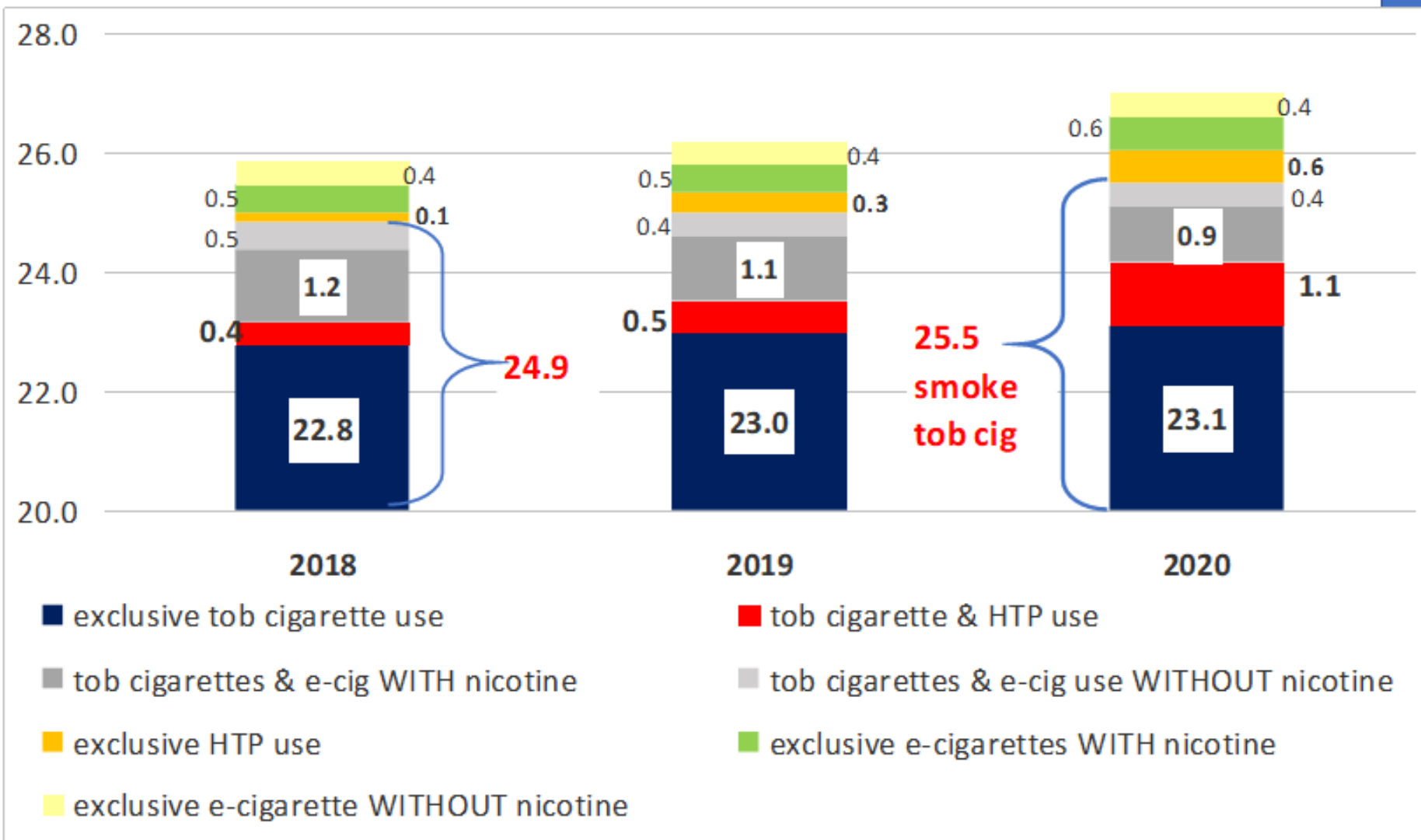


[dati per gentile concessione del Ministero della Salute]

# Increase of HTP & e-cig users: PASSI surveillance system, Italy, 2018-2020



## Gli Italiani rimangono «fedeli» alle sigarette tradizionali



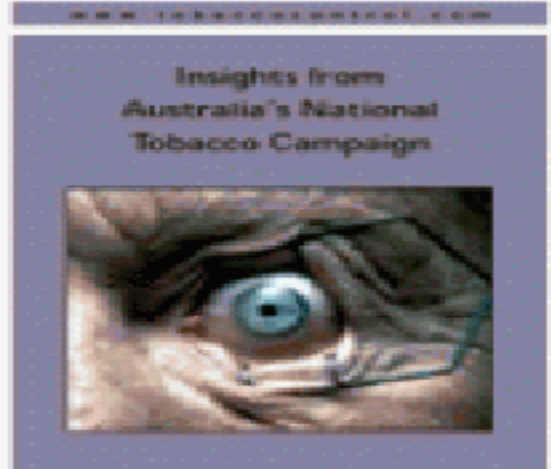
In 2020 in Italy, 57% of e-cig users are dual users; in 2021 in UK 31% are dual users

**5% of smokers use e-cigs; 17% in UK, with a stalling from 2014**

**91% of smokers are still exclusive tob cigarette users; in UK 83%**



# TOBACCO CONTROL



Reimbursement of smoking cessation treatments since 1999

Cigarette package in 2021: ~ € 13

Annual anti-tobacco mass media campaign «Stoptober» since 2012

Public Health England endorsed e-cig since 2015

Plain package since 2018

Anti-tobacco mass media campaign from 1996

Plain Package since 2012

Cigarette package in 2021: ~ € 23



## Australia vs UK



# Implementation of medical prescription of e-cigs for smoking cessation in Australia

- From 1 October 2021, e-cigs with nicotine cannot be sold unless the user has a prescription from a medical doctor.
- Even though in Australia nicotine vaping products are not recognised as a safe and effective aid, some doctors may recommend use of e-cigarettes for long-term smokers who have tried to quit using approved medications but failed, and who still want to quit, and have discussed e-cigarette use with their physicians.

Australian Government. Department of Health. Therapeutic Goods Administration.  
Nicotine vaping products: Information for prescribers.

<https://www.tga.gov.au/nicotine-vaping-products-information-prescribers>

# Australian Report: E-cigs and Health outcomes

Electronic cigarettes and health outcomes: systematic review of global evidence

Report for the Australian Department of Health

Health outcome	Meta-analyses	Randomised controlled trial	Cohort study	Non-randomised intervention study	Case-control study	Surveillance report	Cross-sectional survey	Case series	Case report
Dependence and abuse liability		13 7/6	1 0/1	17 9/8			20 11/9		
Cardiovascular health outcomes	1 0/1	11 3/8	1 0/1	6 5/1			8 1/7		1 0/1
Cancer			1 1/0				2 1/1		3 2/1
Respiratory health outcomes*		9 5/4	5 2/3	5 1/4		18 0/18	21 4/17	11 0/11	26 0/26
Oral health			2 1/1	2 2/0			19 1/18		1 0/1
Developmental and reproductive effects			2 0/2				1 0/1		
Burns and injuries						7 1/6		24 14/10	16 5/11
Poisoning						25 13/12		4 2/2	23 14/9
Mental health effects			1 0/1				8 0/8		
Environmental hazards with health implications**				17 9/8		2 0/2		5 0/5	
Neurological outcomes						3 0/3		2 0/2	7 1/6
Sleep outcomes							4 0/4		
Less serious adverse events		11 3/8	3 1/2	2 2/0		1 0/1	3 0/3		
Optical health				1 0/1			1 0/1		
Wound healing									2 0/2
Olfactory outcomes							1 0/1		
Endocrine outcomes							2 0/2		
Allergic diseases							2 0/2	1 0/1	3 2/1
Haematological outcomes									2 0/2

## Smoking & nicotine cessation:

- There is **limited evidence** that, **in the clinical context**, freebase nicotine e-cigs may be more efficacious than existing NRT, and that nicotine e-cigs may be more efficacious than no intervention or usual care.
- Trials demonstrating efficacy were limited to products with freebase nicotine concentrations  $\leq 20\text{mg/mL}$ .
- There is **no evidence that nicotine salt products** are efficacious for smoking cessation.
- There is **insufficient evidence** that freebase nicotine e-cigs are efficacious **outside the clinical setting**.

[Banks E, et al. *Report for the Australian Department of Health, Canberra, April 2022*]



# Implementation of medical prescription of e-cigs for smoking cessation in UK

- On October 29, 2021, UK announced that e-cigarettes could be prescribed on the NHS in England to help people stop smoking.
- Updated guidance to go through the MHRA regulatory approvals process for medicinally licensed e-cigarette products are available for manufacturers.
- **It's not a new story:** even though in 2016 one e-cig device (e-Voke) was licensed for medical use by the UK medicines regulator, it was never marketed since this product was already out of date. A license for medical use is very difficult to achieve for e-cigarettes, and manufacturers are more interested in extending consumer choice and delivering ever better next-generation e-cigarettes.
- Why prescription? Approved e-cigs can be promoted as smoking cessation aids; further reassurance to health professionals; to improve confidence among smokers.

# Delphi survey of international experts on e-cigs & HTPs

## E-cigs

- components of e-liquids should be provided on the product;
- an upper limit of nicotine concentration should be defined;
- a warning on the lack of evidence in long term safety and the e-cig addiction potential should be stated;
- E-cigs should not be regulated as consumer products but as a new category of products;
- E-cigs should be sold in specialised shops (shops selling tobacco or in pharmacies), with sale restriction for minors.

## HTPs

- These products have the same addictive potential than conventional cigarettes;
- they should be regulated as a tobacco product with similar warning messages than cigarettes; advertisement should not be allowed.

## Both e-cigs & HTPs

- Their use should not be allowed in indoor public places;
- A specific tax should be implemented for e-cigs, and taxes on HTPs should not be lower than those for conventional cigarettes

[Berlin, BMJ Open, 2021]

# Sintesi

- E-cig è efficace per smettere se usata in un contesto clinico, come i CAF; il suo utilizzo dopo aver smesso aumenta le ricadute nel fumo tradizionale
- Il rischio CV nell'uso duale è simile a quello che si ha nei fumatori esclusivi di tabacco.
- Negli adolescenti e-cig triplica il rischio di diventare fumatore, però non si è verificato in Italia un aumento dell'abitudine al fumo tra i giovani dopo l'introduzione di e-cig e HTP.
- I consumi di HTPs in Italia sono aumentati dal 2018 di 6 volte, raggiungendo nel 2021 le 9.2 tonnellate, contro le 61 di sigarette tradizionali che dal 2010 si sono ridotte del 30%.
- Nonostante che nel 2020 la prevalenza di HTPs sia 1.6% e di e-cig del 2.0%, la maggior parte dei fumatori di sigarette tradizionali (91%) continua a fumare esclusivamente sigarette (23.1%)
- Anche se Australia e UK, entrambe con un ottimo livello di implementazione di politiche di contrasto al tabagismo, hanno scelto una regolamentazione rispettivamente molto restrittiva e di promozione di e-cig per smettere, si stanno entrambe orientando a fine 2021 verso una prescrizione medica di e-cig per smettere.

