

Effectiveness of electronic cigarettes for smoking substitution

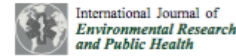


Prof. Dr. Frank Baeyens
EU ENVI March 20th 2018

- I have **no** competing financial interests, and I have no ties with the e-cig industry, nor with the tobacco industry, nor with pharma companies.
- I am an advocate for Tobacco Harm Reduction (THR) in general and for e-cig based THR in particular.
- I was a member of the e-cig advisory committee of the Superior Health Council (Belgium, 2015-16)

Setting the stage: Success rates with(out) quit-smoking assistance

- Smokers who choose to try quitting without any assistance (“willpower”): only **3–5 %** abstinence 6–12 months later
- With medically approved smoking cessation aids and behavioral counseling: at best **doubling or tripling** of chances of long-term success (versus placebo) (JAMA)



Article

English Stop-Smoking Services: One-Year Outcomes

Linda Bauld ^{1,2,*}, Rosemary Hiscock ^{2,3}, Fiona Dobbie ^{1,2}, Paul Aveyard ^{2,4}, Tim Coleman ^{2,5}, Jo Leonardi-Bee ^{2,6}, Hayden McRobbie ^{2,7} and Andy McEwen ^{2,8}

(Bauld et al., 2016)

- Stop-Smoking-Services (2012-2013) UK
- Data on over 3000 quit attempts
- “Our results showed that the overall weighted carbon monoxide validated quit rate for clients at 52 weeks was **7.7%**”

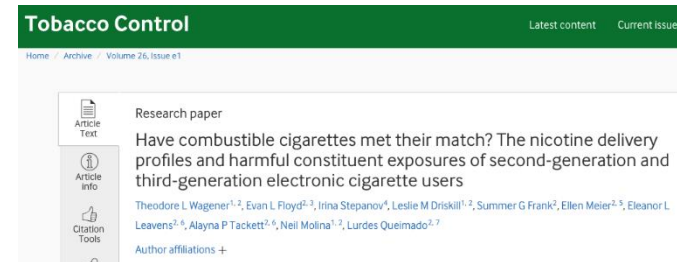
Why it should work *in theory*: efficient nicotine delivery

(Wagener et al., 2016)

(Farsalinos et al., 2014)



Nicotine flux (mg/s):
wattage * mg/ml nic in e-liquid



OPEN Nicotine absorption from electronic cigarette use: comparison between first and new-generation devices

SUBJECT AREAS:
RISK FACTORS
PUBLIC HEALTH

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3 January 2014

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5 February 2014

Published

Konstantinos E. Farsalinos¹, Alketa Spyrou¹, Kallirroi Tsimopoulou¹, Christos Stefanopoulos¹, Giorgio Romagnolo² & Vassilis Voudris¹

¹Oxassio Cardiac Surgery Center, Sigroa 356, Kallithea 17674, Greece, ²Albis s.r.l., Biological and Chemical Toxicology Research Laboratory, Via 42 Martiri, 213/8/28924 Verbania (VB), Italy.

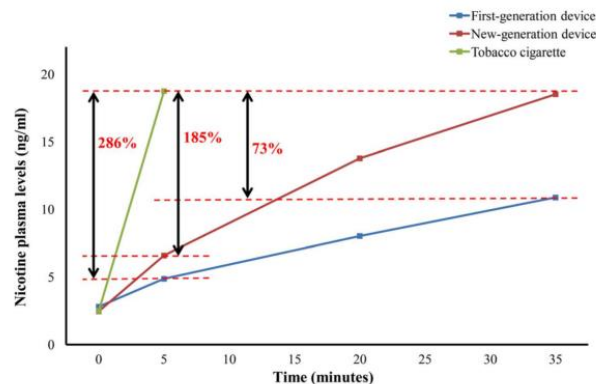
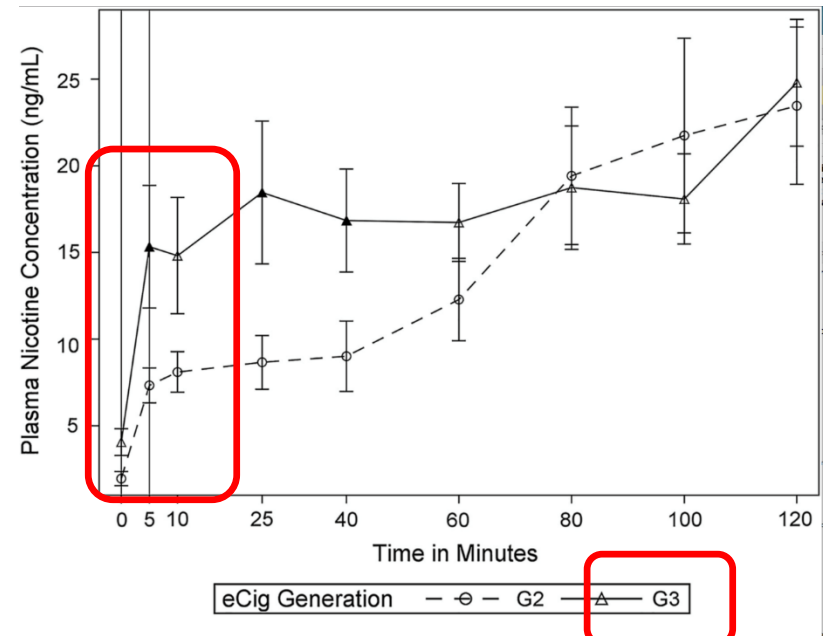


Figure 4 | Comparison between tobacco cigarette and electronic cigarette devices in plasma nicotine levels. Data for tobacco cigarette was derived from Vansickel et al¹. Nicotine levels after smoking a tobacco cigarette in 5 minutes (18.8 ng/ml) are 185% and 286% higher compared to using the first and new-generation electronic cigarette device respectively. Additionally, plasma nicotine levels after smoking one tobacco cigarette are almost equal to the values after using the new-generation device for 35 minutes (18.52 ng/ml), while they are 73% higher compared to the values after using the first-generation device for 35 minutes (10.88 ng/ml).



Why it should work *in theory*: mimicry of sensory/behavioural characteristics

Int. J. Environ. Res. Public Health 2014, 11, 11220-11248; doi:10.3390/ijerph111111220

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Article

Effectiveness of the Electronic Cigarette: An Eight-Week Flemish Study with Six-Month Follow-up on Smoking Reduction, Craving and Experienced Benefits and Complaints

Karolien Adriaens ^{1,†}, Dinska Van Gucht ^{1,2,†}, Paul Declercq ³ and Frank Baeyens ^{1,†,*}



Article

The Importance of Conditioned Stimuli in Cigarette and E-Cigarette Craving Reduction by E-Cigarettes

Martijn Van Heel ^{1,*}, Dinska Van Gucht ^{1,2}, Koen Vanbrabant ³ and Frank Baeyens ¹

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(Adriaens et al., 2014)

(Van Heel et al., 2017)

Figure 5. Cigarette and e-cig craving.

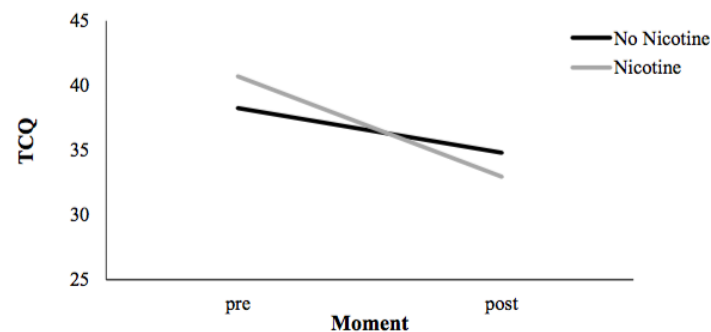
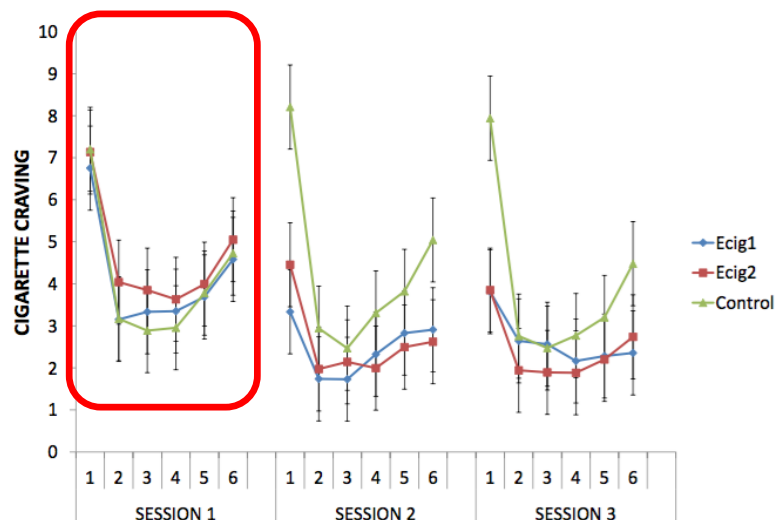


Figure 5. Tobacco cigarette craving (TCQ) pre and post vaping: effect of Nicotine Level.

Does it work in practice? Self-reported quit rates in convenience samples of vapers (BE/NL)

Table 2. Smoking history and current smoking status (mean (SD) or % (95% CI)). FTCD: Fagerström Test for Cigarette Dependence.

	<i>n</i>	<i>M</i> or %	<i>SD</i> or 95% <i>CI</i>
Smoking history			
Ever smoked	201	99	0.96, 1.00
Age of smoking initiation	201	15.3	3
Years smoking	201	28.2	12.5
Made at least one quit attempt	166	82.6	0.77, 0.87
Number of quit attempts	166	4.7	8.4
Longest period of smoking abstinence (in months)	166	22.7	27
Smoking cessation methods used/once being effective			
Willpower	118/57	71.1/34.3	0.64, 0.77/0.28, 0.42
Nicotine patches	78/11	47/6.6	0.40, 0.55/0.04, 0.12
Nicotine gum	61/5	36.7/3.0	0.30, 0.44/0.01, 0.07
Smoking cessation medication	35/13	21.1/7.8	0.16, 0.28/0.05, 0.13
Nicotine tablets	21/2	12.7/1.2	0.08, 0.19/0.00, 0.02
E-cigarette	79/104	47.6/62.7	0.40, 0.55/0.55, 0.70
Characteristics of current smokers			
Smokers	34	16.7	0.12, 0.23
Cigarettes smoked per day	34	10.4	8.0
FTCD	34	3.5	2.6
Motivation to quit	34		
Not wanting to quit		32.4	0.19, 0.49
Thinking about quitting, but not within the next six months		20.6	0.10, 0.37
Thinking about quitting, within the next six months		17.6	0.08, 0.34
Thinking about quitting, within the next month		14.7	0.06, 0.31
Wanting to quit immediately		14.7	0.06, 0.31

Article

Online Vape Shop Customers Who Use E-Cigarettes Report Abstinence from Smoking and Improved Quality of Life, But a Substantial Minority Still Have Vaping-Related Health Concerns

Dinska Van Gucht ^{1,2,*}, Karolien Adriaens ² and Frank Baeyens ²

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(Van Gucht et al., 2017)

83% quitters !

Does it work in practice? Self-reported quit rates in convenience samples of vapers (EU/USA)

Article

Characteristics, Perceived Side Effects and Benefits of Electronic Cigarette Use: A Worldwide Survey of More than 19,000 Consumers

Konstantinos E. Farsalinos ^{1,*}, Giorgio Romagna ², Dimitris Tsiapras ¹, Stamatis Kyrzopoulos ¹ and Vassilis Voudris ¹

smokers and current smokers. *Results:* In total, 19,414 participants were included in the analysis, with 88 of them (0.5%) reported not being smokers at the time of EC use initiation. Complete substitution of smoking was reported by 81.0% of participants (former smokers) while current smokers had reduced smoking consumption from 20 to 4 cigarettes per day. They were using ECs for a median of 10 months. They initiated EC use with a

(Farsalinos et al., 2014)

Int. J. Environ. Res. Public Health **2014**, *11*

4361

Table 2. Past and current smoking status and electronic cigarette use patterns.

Characteristic	Total (n = 19,353)	Current smokers (n = 3682)	Former smokers (n = 15,671)	Statistic	p value
Smoking history					
Years smoking	20 (14–30)	20 (12–30)	20 (14–30)	U = 26,489,867	<0.001
Cigarettes per day	20 (18–30)	20 (16–30)	21 (18–30)	U = 26,909,388	<0.001
FTCD	7 (5–8)	6 (5–8)	7 (5–8)	U = 26,341,216	<0.001
Total past quit attempts	3 (0–6)	2 (0–5)	3 (0–7)	U = 24,851,864	<0.001

81% quitters!

Caveat: “Mere anecdotes”? Self-selection?

- Arguably “causal evidence” that it works for some smokers

- Ostensible cause (e-cig use) and effect (quitting) both well-defined & observable
- “Spontaneous cessation” unlikely
- Experience of multiple failure → now success
- Plausible “mechanism” (finding better substitute for smoking)

- BUT: enthusiastic vapers having most positive and success experience more likely to participate...

- Selection bias
- Overestimation quit rate of target population
- Extrapolation to other populations / whole population of smokers?
 - NO
- ↔ Causal inference justified?
 - Did they quit *because of* using e-cigarettes?

Does it work in practice? RCTs

The National Academies of Sciences, Engineering, and Medicine
THE NATIONAL ACADEMIES PRESS

This PDF is available at <http://nap.edu/24952>

SHARE    



To assess the efficacy of e-cigarettes for smoking cessation, the randomized controlled trial (RCT) provides the strongest study design to protect against threats to internal validity. Ideally, an RCT would enroll cigarette smokers seeking to quit and randomly assign them to switch from smoking combustible tobacco cigarettes to either using e-cigarettes or a comparison condition. The comparison condition could be no e-cigarettes (i.e., no treatment); a placebo (non-nicotine e-cigarette); an FDA-approved smoking-cessation pharmacotherapy, such as nicotine replacement, varenicline, or bupropion; or some other evidence-based cessation intervention, such as behavioral counseling. Each comparison condition would answer a slightly different variant of the question about e-cigarettes' effectiveness. Ideally, the RCT's primary outcome would be biochemically confirmed abstinence from combustible tobacco products 6 to 12 months later. Repeated assessments of adverse events occurring during the period of the study would allow for assessment of risks of e-cigarette use. As described below, the committee found that few RCTs have been done to address the question about effectiveness of e-cigarettes.

- Treat e-cig like medicine (“antibiotics test model”)Standardized type of e-cig, nicotine concentration, flavor, instructions, duration of use, dose, ...
- Randomized Controlled Trial
- No problem with selection bias and confounding
- “Strongest causal inference”

Does it work in practice? RCTs

- Smokers with no quit-intention
- 5 (8) month quit rate 37% (21%)

Int. J. Environ. Res. Public Health **2014**, *11*, 11220–11248; doi:10.3390/ijerph111111220

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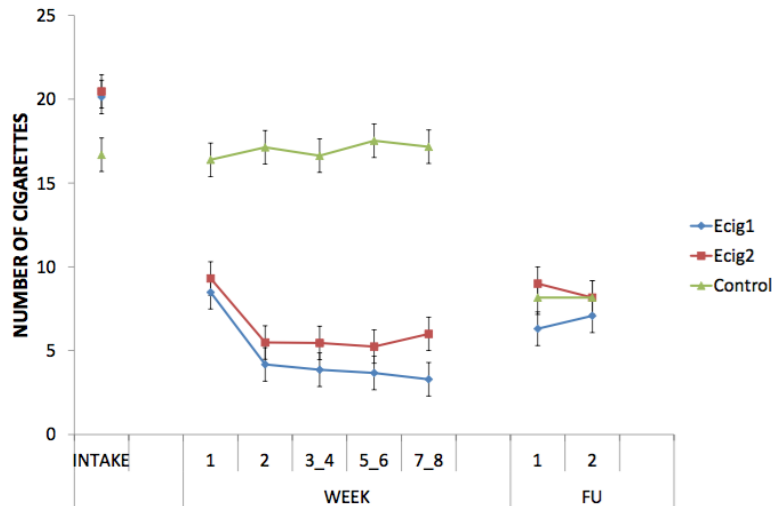
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Article

Effectiveness of the Electronic Cigarette: An Eight-Week Flemish Study with Six-Month Follow-up on Smoking Reduction, Craving and Experienced Benefits and Complaints

Karolien Adriaens ^{1,†}, Dinska Van Gucht ^{1,2,†}, Paul Declercq ³ and Frank Baeyens ^{1,†,*}

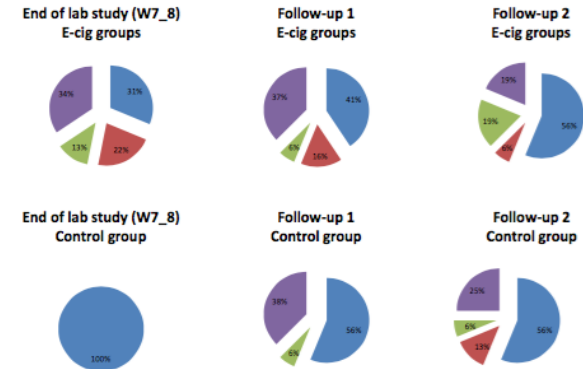
Figure 6. Number of cigarettes/day.



Note: all values mean (\pm 1 SEM) number of cigarettes; $n_{\text{Ecig1-intake}} = 15$, $n_{\text{Ecig1-W1-W7}_8} = 12$, $n_{\text{Ecig1-FU1}} = 13$, $n_{\text{Ecig1-FU2}} = 13$; $n_{\text{Ecig2-intake}} = 15$, $n_{\text{Ecig2-W1-W7}_8} = 13$, $n_{\text{Ecig2-FU1}} = 12$, $n_{\text{Ecig2-FU2}} = 12$; $n_{\text{Control-intake}} = 16$, $n_{\text{Control-W1-W7}_8} = 15$, $n_{\text{Control-FU1}} = 12$, $n_{\text{Control-FU2}} = 12$.

(Adriaens et al., 2014)

Figure 7. Reduction rates.



Note: all values reduction rates (%); $n_{\text{Ecig groups-W7}_8/\text{FU1}/\text{FU2}} = 32$, $n_{\text{Control-W7}_8/\text{FU1}/\text{FU2}} = 16$. The category “Failures” included 3%, 6%, and 28% of participants with missing data at W7_8, Follow-up 1, and Follow-up 2 in the E-cig groups, versus 0%, 6%, and 19% in the Control group.

Does it work in practice? RCTs

Electronic cigarettes for smoking cessation: a randomised controlled trial (ASCEND). Bullen C, Howe C, Laugesen M, McRobbie H, Parag V, Williman J, Walker N. Lancet. 2013 Nov 16;382(9905):1629-37.



Caponnetto P, Campagna D, Cibella F, Morjaria JB, Caruso M, Russo C, et al.

Electronic cigarettes for smoking cessation (Review)

Hartmann-Boyce J, McRobbie H, Bullen C, Begh R, Stead LF, Hajek P

SUMMARY OF FINDINGS FOR THE MAIN COMPARISON *[Explanation]*

Electronic cigarettes (EC) for smoking cessation					
Patient or population: people defined as current smokers at enrolment into trials, motivated or unmotivated to quit Intervention: nicotine-containing electronic cigarettes Comparison: placebo electronic cigarettes or nicotine replacement therapy (or for adverse events, uncontrolled)					
Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)
	Assumed risk ¹	Corresponding risk			
	Control	Electronic cigarettes			
Cessation: Nicotine EC versus placebo EC ² assessed with exhaled CO Follow-up: 6 - 12 months	40 per 1000	93 per 1000 (42 to 201)	RR 2.29 (1.05 to 4.96)	662 (2 studies)	⊕⊕○○ low ^{3,4} Only RCTs reported here. Some cohort data also available (see full review) but only RCTs provide efficacy data
Cessation: Nicotine EC versus nicotine replacement therapy assessed with exhaled CO Follow-up: 6 months	58 per 1000	73 per 1000 (39 to 135)	RR 1.26 (0.68 to 2.34)	584 (1 study)	⊕○○○ very low ^{3,5} As above

- E-cig with nicotine better (9.3%) than “placebo e-cig” (4%)
- About equally effective (7.3%) as NRT(5.8%)

But: inefficient and now obsolete 1st generation e-cigs

Does it work in practice? RCTs

Cochrane Review (2016): “There is evidence from two trials that ECs help smokers to stop smoking in the long term compared with placebo ECs. However, the small number of trials, low event rates and wide confidence intervals around the estimates mean that our confidence in the result is rated 'low' by GRADE standards “

Malas (2016): “While the majority of studies demonstrate a positive relationship between e-cigarette use and smoking cessation, the evidence remains inconclusive due to the low quality of the research published to date.”

NASEM (2018) “In summary, the existing systematic reviews consistently agreed that the available evidence base was insufficient to definitively answer the question of whether e-cigarettes helped smokers to quit. They uniformly identified the urgent need for additional studies of high scientific quality, especially RCTs.

I beg to differ !

Does it work in practice? RCTs

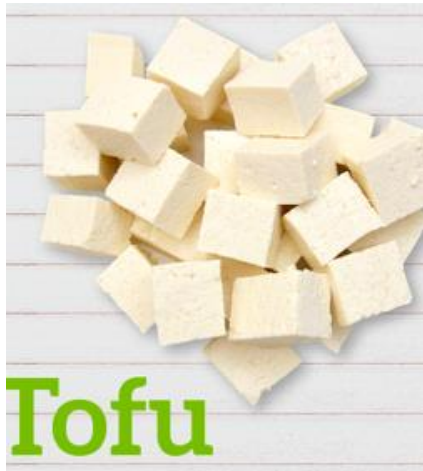
- RCT gives only answer to a very specific question:

"If every "patient" who showed up at a clinic asking for "treatment" to quit smoking were given a particular e-cigarette device and liquid (or a choice among a short list) and a regimented set of instructions about using it (and no further social support), how many would be "cured" of smoking?" (C.V. Phillips)

- Is this what we want to know?
- Medical intervention "for average smoker" vs.
- Consumer product, use of which is guided by principles of:
 - behavioral choice
 - preference
 - costs and benefits analysis

- Effectiveness co-determined by
 - personalized experimentation
 - social support
 - legal/policy context of vaping
 - beliefs & knowledge about e-cigarettes and nicotine consumption
 - personal aims
 - openness to a low-risk substitute for smoking
- People who try vaping are self-selecting for having a better-than-average chance it will work for them

Does vaping promote smoking cessation among those who choose vaping, and however they choose to do it?



- **“Tofu” RCT**
- Effect of providing meat substitutes on meat consumption
- All meat eaters (**regardless of** beliefs, preferences, social environment, personal aims...)
- **Specific** product, instructions for use, “dose”, time window

- **Veggie meat substitutes prospective observational cohort study**
- **Those who self-select** to try vs those who do not
 - Friends who are veggie
 - Belief these are healthy substitutes for meat
 - Available nearby, attractive price
 - Aim to find & use meat-substitute
- **However they want**, whatever they prefer

Prospective/Retrospective Observational Cohort Studies

- A cohort study compares smokers who (self-select to) use e-cigs in a quit attempt with those who do not, and assesses the association between exposure to e-cigs and abstinence from smoking.
- An optimal prospective observational study design :
 - identify and follow a large cohort of smokers who want to quit or are making a quit attempt,
 - assess e-cigarette exposure in detail before the smoking cessation outcome is assessed,
 - biochemically confirm self-reported tobacco abstinence,
 - and adjust for multiple potential confounding factors associated with e-cigarette use and with smoking cessation.
- Strength of observational studies:
 - reflect the effectiveness of e-cigs as they are being used in real-world settings, rather than how a specific device would perform under controlled or optimal conditions.
 - reflect how e-cigs are actually being used in the population, where they are consumer products sold without specific instructions to aid cessation. (NASEM)

Prospective cohort study USA

Research paper



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Long-term e-cigarette use and smoking cessation:
a longitudinal study with US population

Yue-Lin Zhuang, Sharon E Cummins, Jessica Y Sun, Shu-Hong Zhu

- U.S. population-based study of 2,028 smokers who were interviewed in 2012 and followed for 2 years
- Comparison between long-term users of e-cigs (2 years) vs. short-term users vs. non-users: 42% quitters vs. 14-16% (OR = 3)

(Zhuang et al., 2016)

Table 3 E-cigarettes use as predictors of quit attempt rate and cessation rate at follow-up, adjusted for baseline variables (N=2028)

	Quit attempt			Quit for 3 months		
	Per cent	OR (95% CI)*	OR (95% CI)†	Per cent	OR (95% CI)*	OR (95% CI)†
E-cigarettes use status						
Non-user	45.5	1.00	1.00	15.6	1.00	1.00
Short-term	53.8	1.39 (0.97 to 2.00)	1.43 (0.97 to 2.12)	14.2	0.90 (0.56 to 1.43)	0.87 (0.53 to 1.43)
Long-term	72.6	3.16 (1.50 to 6.66)	2.94 (1.34 to 6.44)	42.4	3.98 (1.52 to 10.42)	4.14 (1.50 to 11.42)
Intention to quit						

Prospective cohort study USA

(Biener et al., 2014)

- Representative samples 2 US metropolitan areas; 1374 baseline smokers interviewed in 2011/12 and followed for 2 years (2014)
- Comparison between **intensive users of e-cigs** (daily at least 1 month) vs. intermittent users vs. non-users: **20% quitters vs. 9-12%**
- Controlling for demographic characteristics and baseline smoking level: **adjusted OR = 6***

Original investigation

A Longitudinal Study of Electronic Cigarette Use Among a Population-Based Sample of Adult Smokers: Association With Smoking Cessation and Motivation to Quit

Lois Biener PhD, J. Lee Hargraves PhD

Center for Survey Research, University of Massachusetts, Boston, MA

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Received June 3, 2014; accepted September 19, 2014

Table 2. Adjusted Odds Ratios^a for Smoking Cessation and Motivation to Quit at Follow-up

Dependent variable	Quit smoking (n = 695) ^b	Decreased likelihood of quitting in one year (n = 552)	Decreased readiness to quit (n = 540)
	Adjusted OR (95% CI)	Adjusted OR (95% CI)	Adjusted OR (95% CI)
Gender			
Male	1.50 (0.28–8.10)	0.61 (0.16–2.33)	0.53 (0.13–2.13)
Female	1.00 (ref)	1.00 (ref)	1.00 (ref)
Age group (y)			
18–30	15.40 (1.42–167.53)	1.45 (0.18–11.48)	3.90 (0.69–22.04)
31–49	4.27 (0.44–41.62)	2.20 (0.57–8.58)	6.45 (1.52–27.35)
50–65	1.00 (ref)	1.00 (ref)	1.00 (ref)
Race/ethnicity			
Minority	0.16 (0.03–0.95)	0.59 (0.12–2.90)	2.28 (0.57–9.07)
White non-Hispanic	1.00 (ref)	1.00 (ref)	1.00 (ref)
Education			
≥ BA	8.84 (1.62–48.29)	2.96 (0.78–11.17)	2.05 (0.43–9.81)
< BA	1.00 (ref)	1.00 (ref)	1.00 (ref)
Heavy smoker			
Yes	0.22 (0.04–1.39)	1.74 (0.54–5.61)	2.12 (0.59–7.67)
No	1.00 (ref)	1.00 (ref)	1.00 (ref)
Electronic cigarette use ^c			
Intensive use	6.07 (1.11–33.18)	1.15 (0.18–7.52)	4.51 (0.57–35.52)
Intermittent	0.31 (0.04–2.80)	6.04 (1.50–24.38)	2.41 (0.56–10.28)
Non-use/trial	1.00 (ref)	1.00 (ref)	1.00 (ref)

Prospective cohort study Great Britain

(Hitchman et al., 2015)

Associations Between E-Cigarette Type, Frequency of Use, and Quitting Smoking: Findings From a Longitudinal Online Panel Survey in Great Britain

Sara C. Hitchman PhD^{1,2}, Leonie S. Brose PhD^{1,2}, Jamie Brown PhD³, Debbie Robson PhD^{1,2}, Ann McNeill PhD^{1,2}

- Longitudinal sample of current smokers (N = 1643), 1-year follow-up
- *Controlling for demographic characteristics, baseline smoking dependence, motivation to quit smoking*
- Assessment frequency of e-cig use and type of e-cigarette
- Daily users of refillable e-cigarette (tank/clearo) quit-smoking OR = 2.69 (vs. no e-cig use)
- Non-daily “cigalike” users OR 0.35

Retrospective cohort study USA

(Giovenco et al., 2018)



Prevalence of population smoking cessation by electronic cigarette use status in a national sample of recent smokers

Daniel P. Giovenco^{a,*}, Cristine D. Delnevo^b

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^b Rutgers School of Public Health, Center for Tobacco Studies, 683 Hoes Ln West, Piscataway 08854, NJ, USA



- Nationally representative data (U.S. National Health Interview Survey (NHIS) 2014-2015, N = 15 500)
- Current smokers and former smokers who quit in 2010 or later
- Daily e-cigarette users more likely to be former smokers than never e-cigarette users (52% vs. 28%, adjusted prevalence ratio [aPR] 3.15)
- Those who used them on only some days were less likely (12%) to be former smokers (aPR 0.38)

Conclusions of observational cohort studies

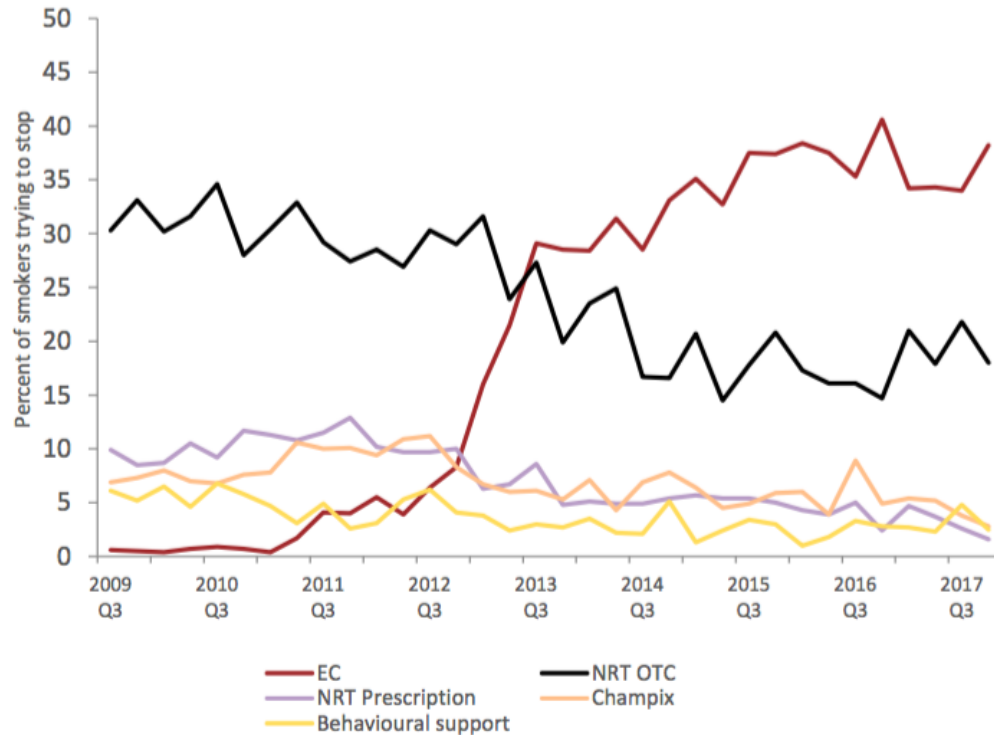
Does vaping promote smoking cessation among those who choose vaping, and however they choose to do it?

- Causal inference justified?
 - Would they have quit otherwise?
 - Did they quit *because* of using e-cigarettes?
- “Residual confounding” possible/likely in some/most of these observational studies

- Yes: 20-52% quitters
- OR: 2.7- 6 (vs. no e-cig)
- Conditional upon:
 - Regular use
 - In context of quit-attempt
 - Use of efficient e-cigarette

Population data: Great Britain

Figure 21: Support used in most recent quit attempts



“Reach” is high 35% !

Impact = (efficacy * reach)

N=13,456 adults (age 16+) who smoke and tried to stop or who stopped in the past year; method is coded as any (not exclusive) use From: <http://www.smokinginengland.info/latest-statistics/> accessed 12/01/2018

Population data: Great Britain

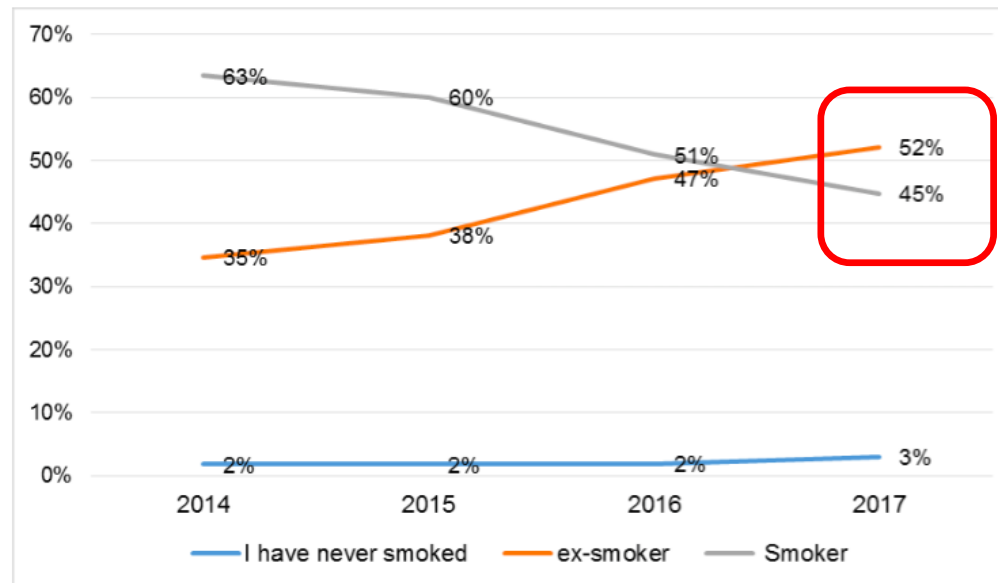
(ASH, 2017)

May 2017

ash fact sheet
action on smoking and health

Use of e-cigarettes (vapourisers) among adults in Great Britain

Figure 1: Current e-cigarette users by smoking status



Over half of current e-cig users = quitters

Unweighted base: (2014 never smokers n=6081 ex-smoker n=4478 smoker n=1710) (2015 never smokers n=6129 ex-smoker n= 3889 smoker n= 2037) (2016 never smokers n= 6099 ex-smoker n= 4354 smoker n= 1704) (2017 never

ASH Factsheet: Use of electronic cigarettes (vapourisers) among adults in Great Britain Planned review date: May 2018

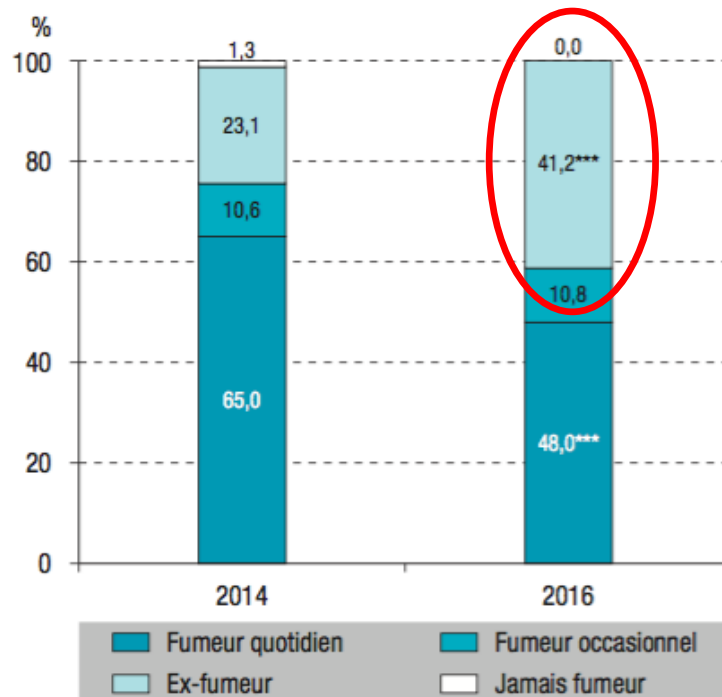
smokers n=6626 ex-smoker n=4438 smoker n=1632)

Population data: France

(Pasquereau et al. (Baromètre Santé 2016), 2017

Figure 5

Statut tabagique des vapoteurs quotidiens en France en 2014 et 2016



*** Évolution significative entre 2014 et 2016, $p < 0,001$.

Source : Baromètre santé 2014 et 2016, Santé publique France.

> ARTICLE // Article

TABAC ET E-CIGARETTE EN FRANCE : NIVEAUX D'USAGE D'APRÈS LES PREMIERS RÉSULTATS DU BAROMÈTRE SANTÉ 2016

// TOBACCO AND E-CIGARETTE IN FRANCE: LEVELS OF CONSUMPTION ACCORDING TO THE PRELIMINARY RESULTS FROM THE 2016 HEALTH BAROMETER

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Santé publique France, Saint-Maurice, France

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41% of current
daily vapers in
2016 = quitters

Population data: Eurobarometer 2014

ADDICTION
RESEARCH REPORT

SSA SOCIETY FOR THE
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ADDICTION
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Electronic cigarette use in the European Union: analysis of a representative sample of 27 460 Europeans from 28 countries

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Intern Emerg Med
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IM - ORIGINAL

Prevalence and correlates of current daily use of electronic cigarettes in the European Union: analysis of the 2014 Eurobarometer survey

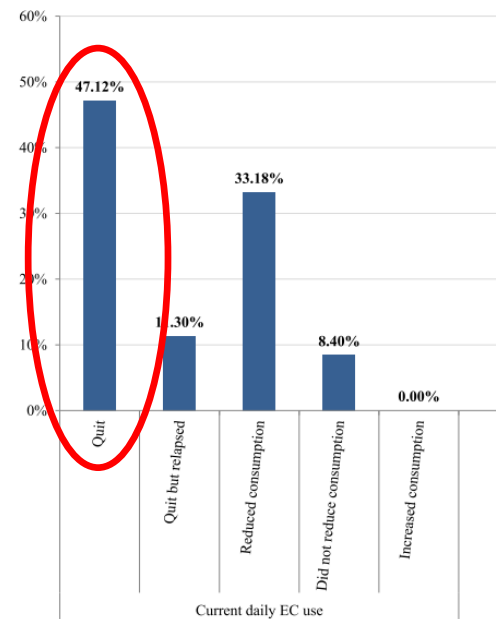
Konstantinos E. Farsalinos^{1,2} · Konstantinos Poulas² · Vassilis Voudris¹ · Jacques Le Houezec^{3,4}

Estimated 6.1 million quitters
and an extra 9.2 million reducers in EU

(Farsalinos et al., 2016, 2017)

Smoking cessation due to e-cigarette use was reported by 35% of current e-cig users, while a further 32% reported smoking reduction

Current daily users : 47% quitters



Population data: Eurobarometer 2017

7,5 millions d'européens se sont libérés de la cigarette grâce à la vape selon l'Eurobaromètre 2016

By [Philippe Poirson](#) | 3.2.18 | [No comments](#)

A partir des données de l'[Eurobaromètre n°458 menée au printemps 2016](#), Frank Baeyens, chercheur à l'Université de Louvain, estime que près de 7,5 millions d'européens de plus de 15 ans ont arrêté de fumer à l'aide du vapotage. Cette enquête dans les pays de l'Union Européenne permet aussi de dénombrer 9 millions de fumeurs ayant réduit leur consommation de cigarettes en se mettant à vapoter. Frank Baeyens a calculé ces chiffres à partir des pourcentages présentés dans le document publié en mars 2017, comme il l'avait fait [pour la précédente édition 2014](#). Son estimation d'alors de 6 millions d'européens ayant cessé de fumer à l'aide du vapotage en 2014 avait été confirmée ensuite par [l'analyse détaillée menée par le Pr Konstantinos Farsalinos](#). En passant de 6 millions à 7,5 millions d'européens libérés de la cigarette en deux ans, le vapotage confirme son rôle disruptif, en dépit des entraves des fonctionnaires européens à l'image du Commissaire à la santé, le lituanien Andriukaitis, et des lobbys bénéficiant du tabagisme.



EU population 15+ = 412.630.644
Number of interviews = 27.901

Base: respondents who smoke or used to smoke and have at least tried e-cigarettes, N=3.612;
Hence $3.612/27.901 = 12,9457\% = 53.418.224$ (ex)smokers who at least tried e-cigarettes in EU.

Of those:

14% quit → 7.478.551 or roughly 7.5 million quitters

10% quit-then-relapsed → 5.341.822

17% reduced → 9.081.098 or roughly 9 million reducers

$3.612/27.901 = 12,9457\% = 53.418.224$

Estimated 7.5 million quitters and an extra 9.1 million reducers in EU