

New data on EC and smoking cessation

Effects of e-cigarettes (EC) when
purchased by smokers

Two types of uninformative studies: 1. Failed vapers

- Following Kalkhoran and Glanz 2016, surveys continue to find lower quit rates in vapers unable to quit
 - Wang et al. Pediatr Res 2017
 - Weaver et al. PLoS One 2018
- Cohorts of smokers unable to quit with EC include heavier smokers with poor prognosis (successful quitters removed)
- See also Villanti et al. Addiction 2018 review of methodological problems

How does the illusion come about?

- Studies recruit smokers, ask them if they tried EC, and check quitting in those that did/did not
- Successful EC quitters left the sample; those left in the EC group, especially dual users, are not good at quitting
- Football talent scouts pick kids from schools. Less talent left than in schools not scouted. Scout visits, like EC use, did not destroy talent, just removed it

Two types of uninformative studies: 2. Treatment failures

- Patients receiving counselling and NRT
- Some tried EC after treatment and were less likely abstinent at 6M than those who did not
- ‘EC may hamper quitting’
- BUT failures were more likely to try EC
- Analysing only non-quitters, the link disappeared

Zawertailo et al. 2017

Treatment failures try EC more than successes: More studies

- Successful quitters in NRT trials were less likely to use EC post-treatment than failures; ‘EC use was associated with lower quitting than non-use’
Curry et al. NTR 2017
- Quitline clients, infrequent (but not daily) post-treatment EC use=lower abstinence
Subialka et al. Addict Behav 2018
- EC use post-treatment ‘associated with less tobacco abstinence’
Rigotti et al. Ann Intern Med 2018

Eurobarometer 2017

- 7% of ex-smokers in EU quit with all licensed meds together
- 6% quit with EC

Note

- Some meds promoted in all EU countries for >35 years; EC much newer (but duration of abstinence/risk of relapse not clear)

Special Eurobarometer 458, 2017

E-cigarette use and associated changes in population smoking cessation: evidence from US current population surveys

Shu-Hong Zhu,^{1,2} Yue-Lin Zhuang,² Shiushing Wong,² Sharon E Cummins,^{1,2} Gary J Tedeschi²

WHAT IS ALREADY KNOWN ON THIS TOPIC

Researchers have offered competing hypotheses about whether the dramatic increase in e-cigarette use helps or hinders smoking cessation at the population level

WHAT THIS STUDY ADDS

E-cigarette users in 2014-15 were more likely than non-users to make a quit attempt and succeed in quitting smoking

The overall rate of smoking cessation for the US population was significantly higher in 2014-15 (when e-cigarette use among smokers was high) than in 2010-11 (when e-cigarette use was very low), as well as than in all previous survey years (when e-cigarette use was practically non-existent)

E-cigarettes appear to have helped to increase smoking cessation at the population level

Balance of evidence after the new crop of data

- EC are by far the most popular quit aid
- Even if their efficacy is the same as that of other aids, they are helping more people, and do so at no cost to health care systems

Effects of e-cigarettes (EC) in clinical context, studies 2017-2018

RCT that included EC

- 1st gen EC, meds+EC, same+incentives (2x)
- Smoking employees, did not ask for treatment
- Repeated blood sampling to be 'abstainer'
- 6-M 'quit rates' 1% in EC and 0.5% in meds+EC arms (NS) (0.1% info+texts)
- Up to \$600 to attend blood sampling: 2.9%
 - 12M: 0%, 0.3%, 0.3%, 1.2% (0%-5% in 'engaged')
- Difficult to interpret

Halpern et al. NEJM 2018

Short-term RCT

- Cartridge EC (Blu)
- N=25:16mg/ml; N=21:24mg/ml; N=22 no EC
- 4M quit rates: 5% control, 4% EC16, 10% EC22 (NS)
- More self-reported reduction with EC, biomarkers difference large but NS

Carpenter et al. Cancer Epidemiol Biomarkers&Prevention 2017

Pre-post cohort

- N=50 smokers with psychosis
- 1st generation disposable EC provided free for 6 weeks, then buying their own
- Asked to replace cigs with EC as much as possible
- Significant reductions in CPD and CO at 4 and at 24 weeks

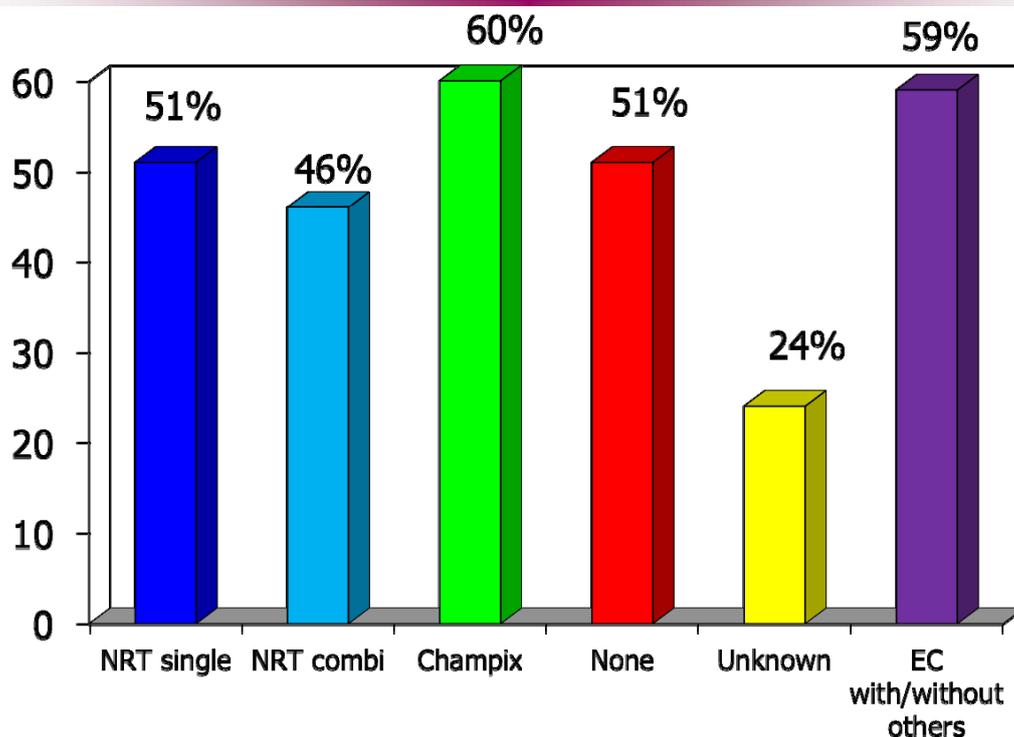
Hickling et al. Psychological Medicine 2018

Laboratory studies

- N=28, within-subjects design
- Overnight abstinence, EC 36mg/ml; EC 0mg/ml; no EC
- Nicotine EC relieved craving vs placebo and no EC
- N=12 abstinent for 24h, nicotine EC relieved craving vs placebo EC

Perkins et al. Exp Clin Psychopharmacol 2017

UK stop-smoking services 2017 4-week self-reported quit rate



Balance of evidence after the new crop of data

- No contributions to Cochrane, so the conclusions that EC with nicotine are better than placebo and EC effects are similar to effects of NRT still stand