

SELECT COMMITTEE ON TOBACCO HARM REDUCTION

Professor Emily Banks
Responses to Questions on Notice from
Hearing on Friday, 13 November 2020

QoN 016-01, Senator Hughes. Please explain the justification for including a study in your report that has a delivery of only 0.01 milligrams per milliliter.

What process did you go through to identify that study? And why did you choose that study when its nicotine content differed so heavily from other studies you included?

Response

Before answering this Question on Notice, it is important to note that the 0.01 milligrams per millilitre refers to the nicotine concentration of the e-liquid included in the intervention e-cigarette. The actual “delivery” of nicotine to the user varies widely between devices, with lower delivery in earlier generation devices and much greater delivery in more recently developed devices, particularly those based on nicotine salts, such as JUUL.

The National Centre for Epidemiology and Population Health was contracted by the Commonwealth Department of Health to review the health effects of e-cigarettes – nicotine- and non-nicotine-delivering – including their efficacy for smoking cessation. Because of the remit to consider all types of e-cigarettes, because e-cigarettes are considered to have additional elements that may be supportive of quitting above and beyond nicotine (e.g. hand to mouth movements, taste, simulation of other aspects of the smoking experience)¹ and because the dose of nicotine received by the user depends on the characteristics of the device as well as the nicotine concentration in the e-liquid, the review of e-cigarette efficacy for smoking cessation was inclusive of all doses of nicotine – including the potential to include e-cigarette interventions not delivering nicotine.

The doses of nicotine included in the e-liquids for all of the randomised controlled trials included in the review are presented in Table 1 of the paper,² providing transparency and allowing the reader to consider them in interpreting the evidence. There was wide variation in the nicotine content of the e-liquids used in the interventions within the trials. In addition to the 0.01 mg/mL e-liquid dose in Lee et al 2019,³ the remaining studies had doses varying from 5.4 to 24 mg/mL;² differences in the ability of the various devices to deliver nicotine from the e-liquid would lead to further variation in dose.

As noted in our response to Questions on Notice from Senator Canavan, the process for study inclusion was outlined in the protocols published on PROSPERO prior to the conduct of the review⁴, so that it was available for comment, and in the supplementary materials to our review, already made available to the committee and referenced below.^{2,5}

References

1. Dawkins L, Munafo M, Christoforou G, Olumegbon N, Soar K. The Effects of E-Cigarette Visual Appearance on Craving and Withdrawal Symptoms in Abstinent Smokers. *Psychology of Addictive Behaviors* 2016; **30**(1): 101-5.10.1037/adb0000112.
2. Banks E, Yazidjoglou A, Brown S, et al. Systematic review and meta-analysis of evidence on the efficacy of e-cigarette use for sustained smoking and nicotine cessation. *medRxiv* 2020110220224212 2020 <https://doi.org/10.1101/2020.11.02.20224212>.
3. Lee S-H, Ahn S-H, Cheong Y-S. Effect of electronic cigarettes on smoking reduction and cessation in Korean male smokers: a randomized controlled study. *The Journal of the American Board of Family Medicine* 2019; **32**(4): 567-74.
4. Banks E, Lucas R, Harris M, et al. A systematic review of the efficacy of e-cigarettes as combustible tobacco smoking and nicotine cessation aids. *PROSPERO* 2020 *CRD42020170692* Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42020170692:
5. Banks E, Yazidjoglou A, Brown S, et al. Supplementary material to Systematic review and meta-analysis of evidence on the efficacy of e-cigarette use for sustained smoking and nicotine cessation. *medRxiv* 2020 <https://www.medrxiv.org/content/medrxiv/early/2020/11/04/2020.11.02.20224212/DC1/embed/media-1.pdf?download=true>.