

DUNEDIN STUDY CONCEPT PAPER

Provisional Paper Title: Does Vaping Help Smokers Quit? Real-World Outcomes and Health Impacts in the Dunedin Study

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Please describe your proposal in 2-3 pages with sufficient detail for helpful review by addressing all areas outlined below.

Objective of the study:

To investigate whether vaping is associated with smoking cessation between the ages of 45 and 52 in the real-world setting of the Dunedin Study

The use of vaping and e-cigarettes as smoking cessation tools is controversial. Health authorities in the United Kingdom and New Zealand (Te Whatu Ora and Ministry of Health) support the use of vaping to quit smoking. Others, including the WHO and US CDC, remain cautious due to uncertain long-term effects and wider social consequences.

In Aotearoa, this debate has relevance and urgency in a shifting policy climate. The repeal of the Smokefree Environments and Regulated Products Amendments Act 2022 removed measures to reduce tobacco retail outlets, lower nicotine levels in cigarettes, and ban sales to those born after 1st January 2009. Instead, the government has promoted individual-level cessation strategies, including “vaping to quit smoking”.ⁱ

Uncertainty of the effectiveness of vaping in smoking cessation is reflected in contrasting international policies. The UK National Health Service postulates it as “one of the most effective tools for quitting smoking”¹ and promotes it through programmes like “Swap to Stop”, providing smokers with vaping kitsⁱⁱ. On the other hand, Australia has classified nicotine-containing e-cigarettes as a prescription-only medicine.ⁱⁱⁱ¹ New Zealand’s relatively permissive regulatory environment sits closer to the UK’s approach. New Zealand has seen a decline in adult smoking rates, which coincides with vaping rates rising from 0.9% from 2015 to 11% in 2024^{iv,v}. However, this could also be due to other measures taken to achieve smokefree 2025. Recent evidence suggests that vaping has not contributed to the decline in youth smoking and may have even undermined it for Māori and Pacific youth.^{vi}

There is robust evidence that e-cigarettes are effective quit-smoking tools in controlled conditions. A Cochrane Review (2025) found high-certainty evidence that nicotine containing e-cigarettes increased quit rates compared to nicotine replacement therapy^{vii}. However, these findings are from highly structured clinical trial settings that do not reflect lived experience. These remove and/or control relevant variables such as inconsistent device qualities, cessation support, and varying nicotine

concentrations that may influence real-world results. Many people who do switch to vaping are simply transferring their nicotine addiction to another device, with the likelihood that they will revert to smoking at some point. It is unclear whether vaping does lead to sustained quitting of smoking in real life.

Evidence on the potential harms of vaping continues to accumulate. This includes impacts on oral, respiratory, and cardiovascular health^{viii}. Other concerns include broader social, cultural, and behavioural harms. This includes increasing uptake and nicotine addiction among youth who have never smoked, normalising nicotine use, and blurring boundaries between “smoker” and “non-smoker”.^{ix} Increased reliance on individual-level quitting strategies such as vaping could disproportionately perpetuate harm to Māori and Pasifika.^x The harms of dual use (concurrent use of vapes and cigarettes), long term vaping, and gateway effects must also be considered. The complex weighting of these risks is represented in the Thoracic Society of Australia and New Zealand’s position statement, which posits e-cigarettes as a last resort to be “used for the shortest period possible and must be supported by behavioural interventions”^{viii}.

A strength of this study is that it will examine vaping in middle-aged adults, a time when many try to quit smoking. Most current research on vaping has focused on young people leaving older adults largely unstudied. It will also reflect the real-life experience of a general population cohort with a high rate of follow up.

Data analysis methods²:

Dunedin Study data mainly collected at Phases 45 and 52 years will be used. At age 45, 21% (198/922) were current smokers and 50% of these had used e-cigs. Phase 52 data on vaping and smoking are currently being collected and we do not have estimates of these variables yet.

Analyses will use compare success in quitting smoking (no smoking for >1 year) between vapers and non-vapers. Poisson regression with robust standard errors will be used to estimate relative risks of quitting for vaping, sex, socioeconomic status, and previous quit attempts. The persistence and resolution of respiratory symptoms (cough, sputum, wheeze, dyspnoea) will be compared between those who continue to smoke from 45 to age 52, those who quit to vape, dual users, and those who didn’t smoke at either age.

Variables needed at which ages:

Phases 45 and 52:

- current smoking data including cumulative pack years updated from previous phases
- respiratory symptoms (wheeze, cough, dyspnoea, phlegm)
- respiratory diagnoses (asthma and COPD)

Demographic data:

- sex
- SES
- Country of residence (NZ vs. overseas)

Significance of the Study (for theory, research methods or clinical practice):

² A key concern for the Dunedin Study is superficial analyses of data that simply identify differences or deficits between ethnic groups or other communities where inequities exist (e.g. persons with disabilities, Pasifika peoples, members of migrant and SOGIESC (Sexual Orientation, Gender Identify and Expression and Sexual Characteristics) communities). The cumulative effect of these types of studies is stigmatising and not of benefit. Any research that identifies differences must (a) incorporate information on the broader context (e.g. historical or political factors); (b) where possible undertake additional analyses to examine the source of the difference/s, and (c) include policy recommendations for its resolution.

Vaping has been seen as one of the key strategies to achieve a Smoke-free Aotearoa. Although smoking rates have declined substantially, we have missed the target of “smoke-free” (<5% smokers in all groups) by 2025. This is largely due to the repeal of other tobacco control measures, leaving vaping as one of the few options to encourage quitting. However, the proliferation of vapes has led to many people (particularly young people) becoming addicted to nicotine for the first time and those that transfer from smoking to vaping tend to remain addicted to nicotine. Anecdotally, many of these people end up using both vapes and cigarettes (dual users) with the potential for harm from both. Although clinical trials show that vaping can be effective in helping a small minority of smokers to quit, the trial conditions are rarely replicated in real life. This analysis will establish the effectiveness of vaping in quitting smoking in a real-life cohort with 7 years follow-up.

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How the paper will contribute to Māori health advancement and/or equitable health outcomes³

Māori have higher rates of smoking than other New Zealanders and very high rates of smoking-related ill-health. In addition, young Māori have higher rates of vaping, exposing them to the definite, but still poorly understood, harms from vaping^{vi}. Understanding whether vaping is really an effective quitting strategy is vital to improve Māori health. If it is effective, then perhaps providing vapes with target approaches to smokers trying to quit should continue. On the other hand, if it is not effective (or has very limited effect), stopping the promotion of vaping could lead to more effective quit methods and reduce uptake of vaping among rangatahi.

References:

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- ^v Mendelsohn CP, Beaglehole R, Borland R, Hall W, Wodak A, Youdan B, et al. Do the Differing Vaping and Smoking Trends in Australia and New Zealand Reflect Different Regulatory policies? *Addiction*. 2025 Feb 9;120(7).
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³ Helpful information can be found here: https://www.hrc.govt.nz/sites/default/files/2020-01/NZ%20Prioritisation-Framework-FA-web_0.pdf

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