

Quantifying nicotine use in young vapers: A scoping study

Renee Bittoun*, Elijah Jesse Viglione & Matthew Bain
The School of Medicine, The University of Notre Dame Australia

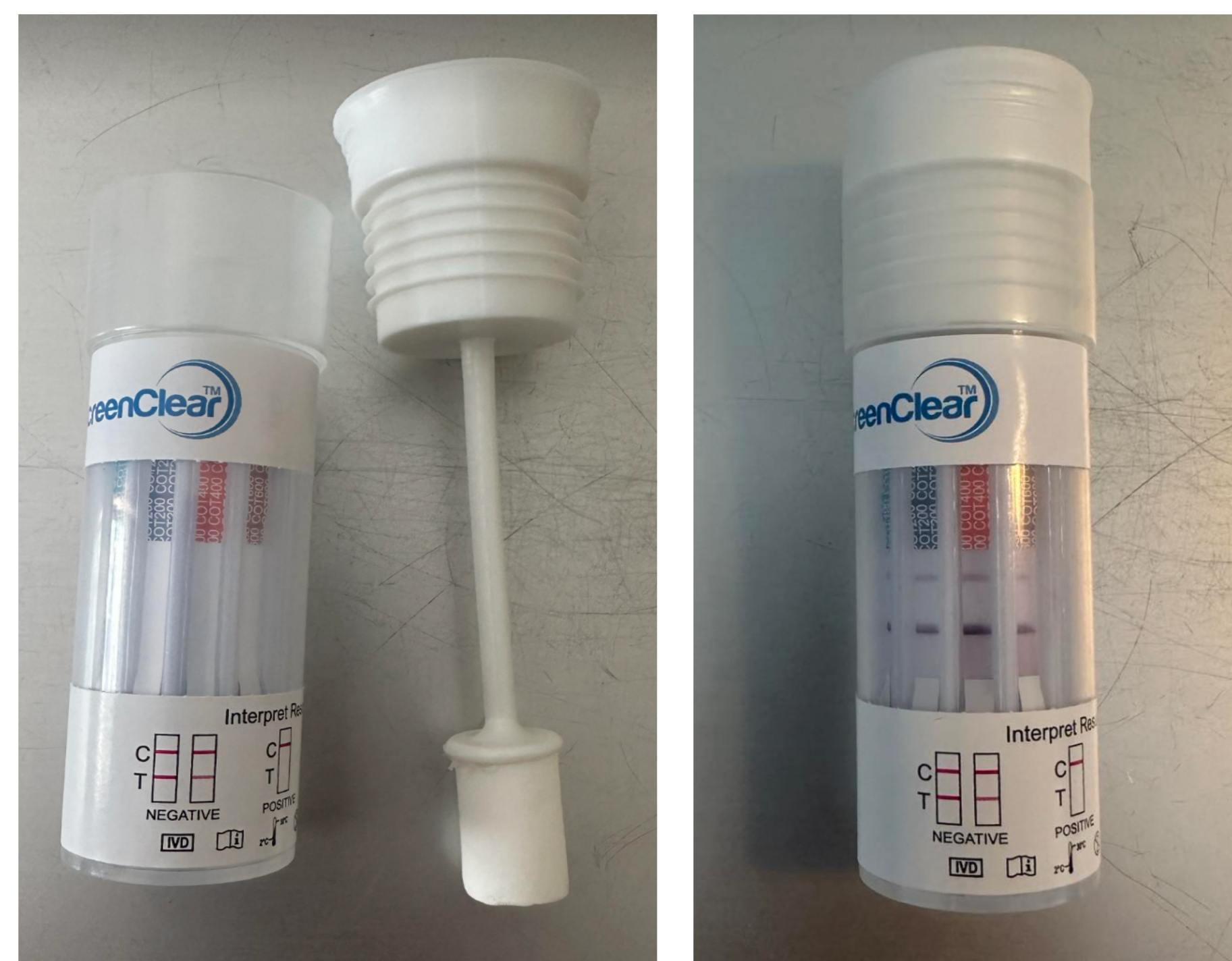
INTRODUCTION/BACKGROUND

- The prevalence of nicotine vaping products (NVP) in Australia by adults and particularly by adolescents has increased greatly in the past few years.
- The ability to quantify the amount of nicotine a user of NVPs extracts has been guess-work to date.
- There are misperceptions regarding numbers of puffs and the nicotine contained in NVPs and dependence of the young user.
- The “topography” (breath-holding, light puffing, individual nicotine metabolism) of vaping has a significant bearing on nicotine plasma levels. These levels drive the usage and inform the management of nicotine withdrawals and vaping cessation.
- Validated questions to indirectly assess plasma nicotine may help us better manage vape usage and develop cessation strategies where required.

METHOD

- Salivary cotinine, the metabolite of nicotine, was tested in anonymous young volunteers who use NVPs.
- This rapid result biomarker was used to validate a simple questionnaire. Expired carbon monoxide test confirmed non-smoking (dual use).

RAPID ORAL SALIVA COTININE TEST



Rapid result oral biomarker test for salivary cotinine, able to determine concentrations of 10, 50 100, 200, 400 and 600ng/mL

RESULTS

- Seventeen volunteers participated in this study (53% female, avg. age 21 years).
- Long-term vape use, daily vaping, waking up at night to vape, vaping in inappropriate settings and symptoms arising between vape uses were **strongly correlated** with higher levels of salivary cotinine.
- Time to first vape after waking, solitary vaping and the demographic characteristics of sex and age were **not correlated** with salivary cotinine.
- While all participants were aware of the presence of nicotine in their NVP, none could accurately quantify the amount.

CONCLUSIONS

A few simple questions have been validated by the salivary cotinine biomarker. This instant test was easily done and participants showed great interest

FUTURE DIRECTIONS...

Simply asking a young person the below questions will help quickly identify young nicotine-dependent vapers and inform best practice management of vaping cessation:

- How long have you been vaping?
- How often do you vape?
- Do you wake up at night to vape?
- Can you stop yourself from vaping in inappropriate settings?
- How do you feel between vape uses?
- Potential to test young people, compare results

ACKNOWLEDGEMENTS

Thank you to the Illawarra Shoalhaven Local Health District (ISLHD) and Western Sydney Local Health District (WSLHD).