

# Smoking and vaping of cannabis in 14-15 year olds:

## Prevalence and correlates of early-onset cannabis use in Aotearoa New Zealand

Jude Ball<sup>1</sup>, Jane Zhang<sup>1</sup>, Joseph Boden<sup>2</sup>, Andrew Waa<sup>3</sup>, James Stanley<sup>1</sup>, David Hammond<sup>4</sup>, Richard Edwards<sup>1</sup>

<sup>1</sup>Department of Public Health, University of Otago, Wellington | <sup>2</sup>Department of Psychological Medicine, University of Otago, Christchurch | <sup>3</sup>Eru Pomare Māori Health Research Centre, University of Otago, Wellington | <sup>4</sup>School of Public Health and Health Systems, University of Waterloo, Canada

### Background

Initiation of cannabis use at an early age elevates risk of harm. Vaping of cannabis is an emerging issue, and it is unknown whether the patterning and correlates of early onset cannabis vaping differ from those of cannabis smoking.

### Aim

This study investigates trends, demographic patterning and correlates of early-onset cannabis smoking and vaping in Aotearoa New Zealand.

### Methods

We used repeat cross-sectional data from a nationally-representative biennial survey (2012 – 2018) of Year 10 students (N=11, 405). Participants were aged 14-15 years, with the majority (over 75%) aged 14.

### Key findings

- Trends in cannabis use in this age group are shown in Figure 1
- Smoking remains the dominant mode of cannabis use in this age group, but in 2018 over a quarter of past month users vaped cannabis (Figure 2)
- The demographic profile of Year 10 cannabis smokers and vapers was similar. Students at schools in the most deprived quintile were over three times more likely to use cannabis than those in the least deprived quintile. Cannabis use was elevated in Māori (indigenous) students. Gender differences were within the margin of error
- Correlates and strength of associations were generally similar for early onset cannabis smoking and cannabis vaping (Table 1)

Figure 1: Prevalence of cannabis use in Year 10 students (14-15 years), 2012-2018

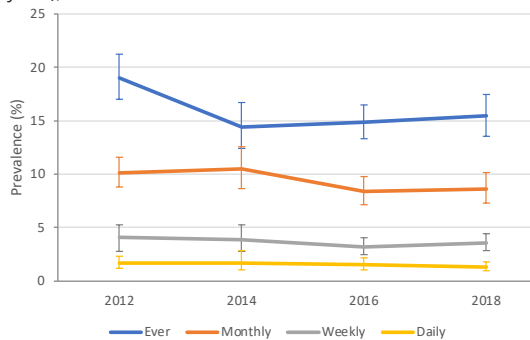


Figure 2: Prevalence of past month cannabis smoking and vaping, 2016 and 2018

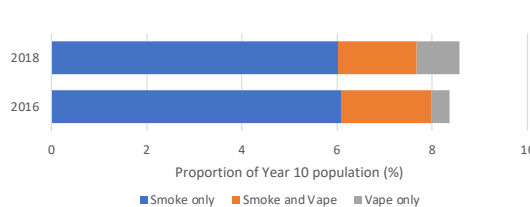


Table 1: Correlates of smoking and vaping cannabis monthly or more often, Year 10 students (14-15 years), 2016/18

		Cannabis smoking	Cannabis vaping
		Adjusted* Odds Ratio (95% CI)	Adjusted* Odds Ratio (95%CI)
<b>Deprivation</b> (Ref: School decile 9-10, least deprived)	Decile 1-2 (most deprived)	<b>3.5 (2.0-6.2)</b>	<b>4.3 (1.9-9.7)</b>
	Decile 3-4	<b>2.4 (1.5-4.0)</b>	1.8 (0.8-3.9)
	Decile 5-6	<b>1.9 (1.2-3.0)</b>	1.1 (0.5-2.4)
	Decile 7-8	1.1 (0.7-1.8)	0.7 (0.3-1.6)
<b>Ever smoked a cigarette</b> (Ref: No)	Yes	<b>32.8 (23.5-45.9)</b>	<b>32.2 (17-61.1)</b>
<b>Past month alcohol use</b> (Ref: No)	Yes	<b>16.3 (11.4-23.3)</b>	<b>14.5 (8.6-24.5)</b>
<b>Past week exposure to second-hand smoke at home</b> (Ref: No)	Yes	<b>4.4 (3.4-5.6)</b>	<b>6.2 (4.0-9.6)</b>
<b>Parental monitoring of whereabouts</b> (Ref: Yes)	No	<b>3.7 (3.0-4.7)</b>	<b>3.9 (2.5-6.1)</b>
<b>Parental monitoring of spending</b> (Ref: Yes)	No	<b>3.0 (2.4-3.9)</b>	<b>2.7 (1.8-4.0)</b>
<b>Consistent parental rules &amp; consequences</b> (Ref: Yes)	No/Don't know	<b>2.0 (1.6-2.5)</b>	<b>2.1 (1.3-3.2)</b>
<b>Student income</b> (Ref: \$10 or less/week)	\$11-\$50/wk	<b>2.0 (1.6-2.6)</b>	1.7 (1.0-2.8)
	Over \$50/wk	<b>4.3 (0.3-5.7)</b>	<b>4.1 (2.4-6.9)</b>
<b>Psychological distress</b> (Ref: Low)	Moderate/High	<b>2.8 (2.2-3.5)</b>	<b>2.7 (1.7-4.2)</b>
<b>Self-esteem</b> (Ref: High)	Low/Moderate	<b>2.7 (2.2-3.5)</b>	<b>2.1 (1.4-3.2)</b>
<b>Social connectedness</b> (Ref: Moderate/High)	Low	<b>2.5 (1.9-3.2)</b>	<b>2.3 (1.5-3.7)</b>

\*Models are adjusted for age, gender and school decile (a school-level measure of deprivation). CI = confidence interval. Bold indicates statistically significant difference from reference group at 95% CI

### Discussion & conclusions

Cannabis use is now more common than tobacco smoking in Year 10 students (14-15 years). The demographic patterning and correlates of early onset cannabis vaping appear to be similar to those for cannabis smoking. Early onset cannabis use is heavily concentrated in structurally disadvantaged demographic groups, and in those who use tobacco & alcohol. Efforts to increase socio-economic equity and reduce exposure to risk factors (e.g. tobacco & alcohol use, second-hand tobacco smoke, psychological distress) are likely to reduce cannabis harm.



### Contacts

jude.ball@otago.ac.nz

### Conflict of Interest statement

No known conflicts of interest.