



Vaping by youths is a hot topic right now. Youth vaping is on the increase and research shows a clear link between vaping and smoking. But that relationship is complex – smoking leads to vaping for most youths, but vaping can also lead to smoking. In this Research Roundup I share key messages from six recent papers from Australia, Canada and America. You can also read a more detailed summary of each research paper on pages 2-5 of this instalment of Tobacco Control News. Happy reading TIS Teams!

According to recent Australian studies vaping is more common in:

- older youths (16-17 years);
- youths who smoke.

In 2017 around one in five Aboriginal and Torres Strait Islander youths from schools across Australia reported that they had tried vaping ([Heris et al 2022](#)). In a more recent survey from NSW ([Watts et al 2022](#)), more than three in five Aboriginal and Torres Strait Islander youth reported they had tried vaping. The study only included a very small number of Aboriginal and Torres Strait Islander youth (n=38) so we need more evidence to really understand what this means for Aboriginal and Torres Strait Islander youth living in NSW. The good news is that the researchers are developing an Aboriginal and Torres Strait Islander led project to vaping in this population in more depth.

[Watts et al.](#) also reported high rates of smoking (55%) for Aboriginal and Torres Strait Islander youth in NSW. We know these higher rates of smoking are explained by factors related to colonisation and vaping will have similar connections. A recent Indigenous-led Canadian study ([Struik et al. 2022](#)) supports this idea. Canadian Indigenous youth were clear that vaping was linked to colonialism and impact of the tobacco industry. Protective factors highlighted by the study included:

- Connection to family, community and culture;
- Understanding that vaping is harmful;
- Having avoidance and resistance strategies (self-efficacy).

Helping youth to build self-efficacy skills so they can resist vaping is an important activity for TIS. Other vital areas of health promotion education for youth include:

- Information on the physical, emotional and behavioural harms of vaping;
- The links between vaping and smoking (including the addictive nature of vaping);
- The role of the tobacco industry in the vape business and links to colonialism.

The evidence tells us that youth often have more positive opinions of vapes than they do of cigarettes and usually don't understand the link between vaping and smoking. They do not always know what is in the vape they are using and think its content is harmless. Providing youth with the facts about vaping harms and the benefits of not vaping is therefore an essential part of any TIS activity with youth.

Two studies from America and Canada also suggest effective ways of sharing prevention activities with youth. These include using social media to reach young people ([The Real Cost Campaign, Vereen et al., 2022](#)) and interactive online learning activities delivered in the classroom ([SOLVE Mystery Toolkit, Hollis et al., 2022](#)). Schools are important settings for promoting youth health and wellbeing. A recent study with staff from Australian primary and secondary schools ([Pettigrew et al., 2022](#)) suggests vaping by youth at school is increasing – and so is smoking. Studies also show that schools can provide a more supportive environment by implementing clear anti-smoking/vaping policies. It is also important to understand and provide support to address the reasons youth vape.



### Where do youths get their vapes from?

Most youths in Australia find it easy to get hold of a vape, but the majority don't purchase them – they get them from friends and siblings, or take them from home. Youths who buy vapes usually purchase them from individuals (often a friend) – only a few buy them from a retail store (for example a petrol station or convenience store).

### Why do youths vape?

We still need more work to better understand why youth vape, but some of the reasons repeated across studies include feelings of stress and anxiety, curiosity, and beliefs that vaping is both harmless and 'cool'. Vaping is often a social activity for youth – peer modelling and positive norms around vaping are also likely to support vaping behaviour.

### Take home message for TIS

A comprehensive package of activities with youth that tackles both smoking and vaping is essential. Activities should include social media campaigns, face to face programs, and interactive online learning. Activities must provide youth with the tools to resist smoking and vaping and the knowledge and understanding of the benefits of not smoking or vaping. At the same time, we should advocate for clear and consistently implemented anti-smoking and anti-vaping policies in schools and other places that youth go, to provide a supportive environment for youth to resist vaping. Supporting youth to find ways to address the reasons they vape is also important.



## In Depth Paper Reviews

### Aboriginal and Torres Strait Islander focused Research

Heris, C., Scully, M., Chamberlain, C. and White, V. (2022). E-cigarette use and the relationship to smoking among Aboriginal and Torres Strait Islander and non-Indigenous Australian Secondary Students, 2017. Australian and New Zealand Journal of Public Health <https://doi.org/10.1111/1753-6405.13299>

This study used data from the 2017 Australian Secondary School Alcohol and Drug (ASSAD) survey to estimate the prevalence of e-cigarette use and its relationship to smoking among 1,097 Aboriginal and Torres Strait Islander students aged 12-17 years.

#### Take home message

The majority of Aboriginal and Torres Strait Islander students (78.4%) report never having tried vaping, which is a position of strength from which to begin addressing vaping in youth. The relationship between smoking and vaping is complex – it seems most youth smoke before they vape, but for others smoking follows vaping. We must keep addressing smoking and vaping together. We should not ignore vaping, but it is also important not to neglect smoking behaviours, as this may undo the progress made to date.

#### Key findings show that for Aboriginal and Torres Strait Islander students

- Vaping was more common amongst older male students (16+) and tobacco users;
- Around one in five (22%) students had tried vaping;
- Two thirds (67%) of students who had tried vaping, smoked before they vaped;
- Just over a quarter (26.0%) of students who had never smoked when they had their first vape, went on to try smoking;
- Vapes were typically sourced from friends (57%) or family/home (23%).

#### Study limitations relate to the ASSAD survey data which

- May underestimate the number of Aboriginal and Torres Strait Islander youth who have tried vaping because it only represents youth attending school;
- Only records the number of vaping episodes (from 'Yes, just a few puffs/vapes' to 'Yes, I have used/vaped more than 100 times in my life') so we don't know how many students are currently vape users or how often they vape (e.g. daily, weekly or less);
- Is cross-sectional.

#### Cross-sectional versus longitudinal studies

Cross-sectional data gives a snapshot of a group of people at one point in time. This is different to a longitudinal study where researchers study a group of people across a number of years. A limit of cross-sectional studies is that when we find two behaviours such as smoking and vaping that co-exist, we can be confident of a link, but cannot be completely certain one causes the other. To test a causal link researchers need to follow a group of students over time to see how their smoking and vaping behaviours change.

### Australian Research (NSW)

Watts, C., Egger, S., Dessaix, A., Brooks, A., Jenkinson, E., Grogan, P. and Freeman, B. (2022). Vaping product access and use among 14–17-year-olds in New South Wales: a cross-sectional study. Australian and New Zealand Journal of Public Health <https://doi.org/10.1111/1753-6405.13316>

This survey asked 721 youths aged 14–17-years from NSW about access to e-cigarettes and reasons for vaping.

#### Take home message

This paper adds to the evidence that the relationship between vaping and smoking in youth is complex and we need to learn more about why some youth vape and others do not, so that effective prevention activities can be designed. The high number of Aboriginal and Torres Strait Islander youth in the vaping group highlights the need for Aboriginal and Torres Strait Islander-specific research. An Aboriginal and Torres Strait Islander led project is currently in development.

#### Key findings show that for NSW youth surveyed

- Around two thirds (65%) had never tried smoking or vaping and the remaining third (32%) were 'ever-vapers' (ranging from having tried a few puffs, to vaping on more than 100 occasions);
- Around one in five (23%) reported having both smoked and vaped, whilst a small number had only smoked (3%) or vaped (9%);
- Of those who had smoked and vaped, most smoked before they vaped (64%) however, a large number of youths vaped before they smoked;
- Vaping was more common amongst older students aged (17+), those who had ever smoked tobacco and Aboriginal and Torres Strait Islander youth (68%);
- Smoking rates were also high for Aboriginal and Torres Strait Islander youth (55%);
- The most commonly used vapes were disposable (52%) and known to contain nicotine (53%), although two in five ever-vapers (40%) could not describe the type of vape used and around a quarter (27%) did not know if they had used a device containing nicotine;
- Vape characteristics rated as important included flavour, price, ability to conceal the vape and vapour, relaxation, and the nicotine hit;
- Just over three quarters of ever-vapers (77%) reported finding it easy to access vapes;
- The majority of 'ever-vapers' (70%) had not purchased their last vape, but got them from others (mainly friends), whilst the remaining 30% bought them from a friend/individual selling vapes (49%) or a retail store (31%).

#### Study limitations

- Data is cross-sectional
- The study was not designed to measure vaping prevalence and only recorded the number of vaping episodes (from 'Yes, just a few puffs/vapes' to 'Yes, I have used/vaped more than 100 times in my life') so we don't know how many students are current vape users or how often they vape (e.g., daily, weekly or less);
- The study only included a small number of Aboriginal and Torres Strait Islander youth (n=38) all of whom were from NSW, so we don't know if the smoking and vaping rates reported here are representative of all Aboriginal and Torres Strait Islander youth across Australia.

## Australian Research

Pettigrew, S., Miller, M., Kannan, A., Raj, T.S., Jun, M. and Jones, A. (2022). School staff perceptions of the nature and consequences of students' use of e-cigarettes. *Australian and New Zealand Journal of Public Health*  
<https://doi.org/10.1111/1753-6405.13281>

This research describes student vaping in Australian primary and secondary schools from the point of view of 196 school staff. Three quarters of participants (76%) were teachers, with the remaining quarter including principals, counsellors, librarians, office and grounds staff.

### Take home message

Study findings reinforce the evidence that vaping in youth is on the increase. Findings also reaffirm the complex link between smoking and vaping with an increase in the use of conventional as well as e-cigarettes observed by school staff in the past two years. Schools are important settings for promoting youth health and wellbeing. This includes preventing harmful behaviours such as smoking and vaping. Ongoing health promotion action in schools to address smoking and vaping is an essential activity for TIS.

### Key findings

- Around four out of five (84%) staff from secondary schools and around a third (35%) of staff from primary schools reported that at least some of their students' used e-cigarettes;
- Half the staff (51%) had noticed an increase in the use of e-cigarettes and around one in five (22%) had seen an increase in conventional cigarette smoking over the past two years;
- E-cigarette use was thought to be motivated by the belief that vaping was cool and less harmful than regular cigarettes, curiosity, and seeing a friend use them;
- Just over half (57%) the staff who reported vaping at their school believed this had a negative effect on student mood, behaviour and mental health, as well as social interactions, and both sporting and academic performance;
- Student vaping was reported to take place in school bathrooms, right outside school, and on sports fields;
- Vapes were mainly sourced from friends, siblings and the internet, or taken from home;
- Just over half of respondents (55%) confirmed their school provided smoking prevention education, less than a third (31%) reported vaping prevention education and just over a third (35%) reported having a vaping policy.

### Study limitations

- Findings rely on the perception of school staff rather than student self-report or independent observation – staff may over or underestimate student behaviour depending on their own beliefs about vaping and their experiences at school;
- Study participants were recruited from a web panel so may not be representative of all Australian schools meaning results are exploratory rather than definitive.

## Canadian Indigenous Research

Struik, L., Werstuik, ST., Sundstrom, A. et al. (2022). Factors that influence the decision to vape among Indigenous youth. *BMC Public Health*  
<https://doi.org/10.1186/s12889-022-13095-y>

This Indigenous-led study used semi-structured interviews and a traditional Sharing Circle to explore 16 Indigenous Canadian youths' views and experiences of vaping. A framework was co-designed to explain vaping decision-making among Indigenous Canadian youth and how to best to address these factors.

### Take home message

While this is a Canadian study, findings are reflective of the Australian Indigenous context including the link between e-cigarette use, the tobacco industry and colonialism. The strength and resilience that comes from connection to family, culture, community, and traditional ceremony and values is also relevant to the Aboriginal and Torres Strait Islander context.

### Key findings

Key findings included the identification of two themes that described factors influencing vaping decision making and one theme highlighting possible prevention messaging:

#### Context of vaping among Indigenous youth:

Vaping was described as a modern behaviour with no connection to traditional tobacco use and directly opposed to traditional ceremony/in conflict with cultural values. E-cigarettes were linked to colonialism and the disproportionate impact of the tobacco industry on Indigenous youth;

#### Factors influencing vaping decision-making included the following beliefs, knowledge and environmental factors:

- The intention to vape was supported by the belief that vaping helps you cope, makes you look cool and is an accepted social behaviour in your peer group;
- The decision to vape was described as something that often took place in a split-second because of 'social panic';
- The shift from intention to behaviour (vaping) was supported by environmental factors such as school policies that are not enforced and easy access to vapes;
- The intention to not vape was supported by the belief that vaping is harmful, strong connection to family and community, family values that do not support vaping, and feelings of self-efficacy (which related to engaging in culture and self-reflection, along with having avoidance/resistance strategies);
- The shift from intention to behaviour (not vaping) was supported by environmental factors such as having supportive adults to turn to and school policies that were well implemented;

#### Suggestions for prevention messaging included:

- Sharing messages where youth will hear them – in community and on popular social media networks (e.g., Instagram);
- Reflecting the reasons youth vape (e.g., as a way to cope with stress and anxiety);
- Highlighting the strengths and resilience of Indigenous youth to stay away from vaping;
- Focusing on helping youth self-reflect on vaping (e.g., "what's the point?", "what do you gain?"), describing things that could be purchased instead of vapes and helping to build skills to manage situations of social panic;
- Having peers share personal experiences with vaping, and endorsement by celebrities/influencers.

### Study limitations

- Findings reflect the views and experiences of urban Canadian Indigenous youth and these may not be the same as the views and experiences Indigenous youths from other countries or contexts;
- Participants were attending an Indigenous Summer Camp, suggesting they were very engaged with culture – Indigenous youth who do not have a strong cultural identity may have different views and experience which need to be reflected in prevention messaging.

### Canadian Research

Hollis A, Downey E, Standing S, Leahy J, Ebbert K, Ganesh A. (2022). A vaping risks education program for school students: Evaluation of the solve mystery toolkit. *Preventive Medicine Reports*, 28:101852.

<https://doi.org/10.1016/j.pmedr.2022.101852>

This study describes the evaluation of a multi-media education program about vaping risks for ages 12-15 years. The SOLVE (Short On or Off-Line Vaping Risks Education) Mystery Toolkit was designed for teachers to use in the classroom, or for online learning. Students are presented with a mystery scenario 'What Happened to Payton?' via a short video. They must then uncover the role of vaping in the mystery, using various evidence files. Next, they consolidate their learning about vaping risks by completing a series of fill-in-the-blank worksheets and watch video messages from health professionals. Finally, students apply this knowledge to real-life scenarios (e.g. speaking to a friend about vaping). Evaluation surveys were completed by 484 students and 8 teachers.

### Take home message

This is a good example of an interactive educational school program that can be delivered by teachers. Read more about the program and what it involves [here](#):

### Key Findings

- Most students reported excellent, good or satisfactory increases in knowledge about the health effects of vaping (87%) and knowledge of vaping risks (97%);
- Over three quarters of students (77%) reported excellent, good or satisfactory enjoyment of the program;
- Favoured program features were solving a mystery (33%), hearing from real life peers and experts (32%), and learning about vaping risks (17%);
- Six of the eight teachers surveyed said they would recommend the toolkit to their colleagues, whilst seven said it was better or much better than other educational resources and easy to use.

### Study limitations

- Survey completion was voluntary, which may have led to 'selection bias' – that is the students who completed surveys were those who found the toolkit fun or informative. This could have led to an over-estimation of the impact of the toolkit on student' knowledge;
- Students were asked to self-report if they had learnt anything about vaping risks but this was not confirmed by a measure of knowledge change – for example, the survey did not include a pre-post-test of student knowledge.

### American Research

Vereen RN, Krajewski TJ, Wu EY, Zhang JH, Sanzo N, Noar SM. (2022). Aided recall of The Real Cost e-cigarette prevention advertisements among a nationally representative sample of adolescents. *Preventive Medicine Reports* <https://doi.org/10.1016/j.pmedr.2022.101864>

This study provides evidence to support the aided recall of video ads from the [Real Cost campaign](#) an anti-smoking and vaping social media campaign from the USA. A nationally representative sample of 623 USA adolescents aged 13-17 years completed the survey.

### Take home message

Anti-vaping ads shared through social media do reach young people and are an important part of a comprehensive package of activities tailored to reach youth. Study findings also indicate that videos that use peer messaging and visual story telling may have the most reach.

### Key findings

- About 16% of adolescents had vaped in the past 30 days (defined as 'current users'), 45% had tried vaping more than 30 days ago and said they might do so again (defined as 'at-risk of vaping') and 40% had never vaped;
- One in five adolescents recalled all five Real Cost campaign ads, with 71% recalling at least one of the ads;
- The most recalled ads were Narrative, where teens share their personal stories of negative vaping experiences, and Epidemic, where a narrator describes the harms of vaping as chemicals are shown to travel through teens' bodies causing physical changes (both recalled by around half of the participants);
- The least recalled ad was Magic, an ad in which street magician and social influencer Julius Dein turns a vape into a cigarette (38.8%);
- Respondents who used social media frequently were almost twice as likely to recall the ads compared to low social media users.

### Study limitations

- Around one in five participants (19%) reported seeing a decoy ad (one that does not exist) suggesting possible over-reporting of ad exposure;
- This study only measures reach of the ads, not impact on knowledge, attitudes, beliefs, or behaviours.