



# Snapshots of Vaping at Hawke's Bay Secondary Schools

FINDINGS OF SURVEYS COMPLETED 2019 - 2021

## **Acknowledgements**

Many hands have touched this work since the initial survey in 2019.

The surveys were planned, executed and preliminarily analysed by John Adams, Kirsty Bloomer, Kate Davis and the Child Health Team at Hawke's Bay DHB.

Formal data analysis was completed by Dr Sylvia Duncan with oversight by Dr Nicholas Jones. Report was completed by Dr Sylvia Duncan with input from the Child Health Team.

Many thanks to our contributing schools and wider community without whom this work could not have been collated.

## **Disclaimer**

This report is a summary of the results of an informal school-based survey on youth vaping. It has not been externally peer reviewed. If information from this report is being used by external parties, it should be done so with clear acknowledgment of the limitations in survey methodology which have been clearly outlined within this report.

## Table of Contents

Acknowledgements.....	1
Disclaimer.....	1
Table of Contents.....	2
1. Executive Summary.....	3
2. Context.....	4
2.1 Vaping.....	4
2.2 Harms of Vaping.....	4
2.3 New Zealand Context.....	6
2.3 Within Hawke’s Bay.....	7
3. Methods.....	9
3.1 Methodology.....	9
3.2 Ethics.....	9
3.3 School Population.....	9
4. Results.....	11
4.1 Smoking and vaping status.....	11
4.2 Correlation between smoking and vaping status.....	11
4.3 Vaping Frequency.....	13
4.4 Source of ENDS.....	15
4.5 Nicotine Quantity.....	16
4.6 Changes to Vaping Habits and Attitudes.....	16
4.7 Limitations.....	17
5. Key Conclusions.....	18
5.1 Next Steps.....	19
APPENDIX 1: References.....	20
APPENDIX 2: Survey Questions.....	22

## 1. Executive Summary

Vaping is a form of nicotine delivery promoted in New Zealand as a “smoking cessation” aid.

There is growing concern that these devices are also being used by young people despite the legislated age restriction and that they are being used by people who have never smoked cigarettes.

Surveys of Hawke’s Bay Year 9-13 students were completed in 2019 and 2021 in response to comments from educators and health professionals that vaping was endemic in the region and impacting students’ ability to learn. This report details the 2021 findings and compares them to 2019, providing snapshots of prevalence and attitudes towards vaping use.

This report is limited by its survey design but despite this it raises a number of important questions. The proportion of youth never-smokers who are vaping in Hawke’s Bay is significantly higher than reported by the annual nationwide ASH – Action for Smokefree 2025 survey. Some underage students are obtaining vaping products from retailers and “street suppliers” which has implications for enforcement of new legislation coming into force August 2021.

A larger national survey is being performed by Te Hā Ora: Asthma and Respiratory Foundation NZ to be released in Nov 2021.

## **2. Context**

### **2.1 Vaping**

Electronic Nicotine Delivery Systems (ENDS) are handheld vaping appliances which produce nicotine-containing vapour. ENDS have generated significant interest as a possible way to reduce smoking amongst those unable to quit using traditional support (such as nicotine replacement therapy (NRT)) in order to meet New Zealand's Smokefree 2025 commitment. The New Zealand Ministry of Health (MOH) has adopted a policy of promoting ENDS substitution for smokers as a harm reduction strategy and as a means to Smokefree 2025. The use of ENDS as a smoking cessation tool has not been universally adopted internationally. In the UK the Stop Smoking Services promotes ENDS use while the US Food and Drug administration has not approved e-cigarettes as a quit smoking aid.

A recent systematic review and meta-analysis concluded while there is moderate-certainty evidence ENDS increase quit rates compared with nicotine-free devices and NRT, further research needs to be done with larger randomized controlled trials and much longer follow-up periods to study possible long-term effects (Hartmann-Boyce J, 2021). It should be noted that smokers who remained users of ENDS were classified as "successfully quit" cigarettes in this review, despite ongoing nicotine consumption.

### **2.2 Harms of Vaping**

While there is agreement that ENDS use is less harmful than tobacco use it is clear that vaping is not without potential harm. A Public Health England statement from 2015 stated that e-cigarettes have 1/20<sup>th</sup> of the risks associated with traditional smoking. This risk reduction is often expressed as "vaping is 95% less harmful than smoking" and has been challenged in recent years due to concerns about methodology and some authors' association with e-cigarette distribution companies (Burrowes, Beckert, & Jones, 2020).

Nicotine is a recognised carcinogen previously used as a pesticide and has been associated with cardiovascular disease (Benowitz, 2016). Given ENDS is a relatively new form of nicotine delivery, there are limited scientific studies reviewing long-term effects on adolescent development so evidence largely consists of animal models and population-level association. Below is an outline of some of the known harms of e-cigarette use, including harms from nicotine itself.

### **2.2.1 Respiratory**

ENDS contain a multitude of chemicals including acetaldehyde, formaldehyde and acrolein (Ogunwale, 2017). An extensive survey of 45000 adolescents in Hong Kong indicated e-cigarette use in the previous month doubled the risk of chronic cough or phlegm (Wang MP, 2016) and similar surveys of young people in Hawaii associated e-cigarette use with repeat asthma exacerbations (Wills TA, 2017). Given decades of cigarette smoking are needed before development of chronic obstructive pulmonary disorder (COPD) or lung cancer, long-term respiratory effects of e-cigarette use may not be visible for decades to come.

Bronchiolitis obliterans or “popcorn lung” has been associated with diacetyl, a flavouring for nicotine products. It has been banned in the UK but New Zealand does not currently have e-liquid safety standards in place so people are advised it is “best to check the label and avoid it” (Health Promotion Agency, 2019). In late 2019, an epidemic was declared by Centers for Disease Control (CDC) as emergency department visits related to ENDS dramatically increased (Centres for Disease Control and Prevention, 2020). Across the United States, over 2000 people were diagnosed with E-Cigarette or Vaping Associated Lung Injury (EVALI), later strongly associated with Vitamin E inhalation.

### **2.2.2 Neurological**

Theoretical concerns have been raised surrounding uptake of vaping devices by young people, given the possible effects of nicotine on the normal neurodevelopmental process. As the brain continues to develop until around age 25, brain pathways are plastic and disruptions to normal synapse and myelin growth may shape further development. Adolescent nicotine exposure in animal models induce synaptic changes in areas of the brain important for normal attention, memory and cognition which last into adulthood, possibly underlying observed impairments in attention and cognitive function (Bergstrom HC, 2008). Studies on these risks are limited but adolescent twin studies indicate an increase in attention problems from adolescence to adulthood in smoking twins compared to their non-smoking twin (Treur JL, 2015). Evidence from animal studies suggest nicotine exposure in adolescence could result in a subsequent increase in mood disorders (Yuan M, 2015). While there have been no studies specifically investigating this association in ENDS use, it is concerning that similar effects may be possible.

### **2.2.3 Addiction**

There is particular concern about the recruitment of young people to nicotine use through the uptake of vaping by young people. Nicotine is an addictive substance, particularly so in developing brains as sensitivity to nicotine is heightened (Surgeon General, 2016). The tendency of ENDS to addiction is

suggested to be at least equivalent to that of conventional cigarettes given the level of nicotine delivery (Ramôa CP, 2016). In a previous cohort study, those who vaped were 6.17 times more likely to start smoking cigarettes over a 16-month period than those who did not use e-cigarettes (Barrington-Trimis J, 2016). Vaping is also associated with an increase in drug-seeking behaviours (Kandel D, 3014) and illicit drug use in university students (Grant J, 2019).

### **2.3 New Zealand Context**

New Zealand has implemented a strategy of promoting vape use amongst people with an established smoking addiction as a means to reduce the harms from smoking. Rather than regulating and funding vapes as a cessation medicine under the Medicines Act, New Zealand has chosen to adopt a regulated retail sales approach. This includes permitting the sale of vape products through a regulated network of retailers without the additional excise taxation regime applied to tobacco products. As a result, vape products provide equivalent nicotine doses at considerably lower price points to tobacco.

In adopting this approach, it has been recognized that there is a risk that vapes containing nicotine could be used by children and adults who are not established smokers. Use of ENDS in these groups could result in the establishment of nicotine addiction among persons not previously addicted. The authors would argue that from a nicotine production industry perspective there is in fact a strong commercial interest in growing the market for ENDS products amongst non-smokers.

The Smokefree Environments and Regulated Products (Vaping) Amendment (SERPA) Act was written and came into effect in November 2020 (New Zealand Legislation). A Vaping Regulatory Authority has been established and is responsible for the regulation of smokeless tobacco/nicotine containing retail products such as ENDS.

Regulations in place, or due to be enacted by SERPA by February 2022 include:

- Vaping is prohibited at or around schools or early childhood centres
- No advertising, sponsorship permitted
- It is now illegal to sell to those under-18
- Retailers are to be divided into “specialist vape retailers”, who have more than 70% of their revenue from vaping products and can sell any flavours, and “general retailers” who can sell only certain flavours
- Manufacturers, importers and distributors will only be able to sell notified products

Approvals for specialist vape retailers are granted by the Vaping Authority within the Ministry of Health. The authority does not currently consider factors that may increase the risk of sale to children in assessing application for specialist licences e.g. proximity to a school. As of August 1st 2021, there were 541 approved transitional specialist vape retailers nationwide with others still pending.

The Ministry of Health (MOH) has released a position statement stating clearly that “vaping products are intended for smokers only” (Ministry of Health, 2020). Similarly, the Vaping Facts website, established in partnership between MOH and the Health Promotion Agency/Te Hīringa Hauora (HPA), promotes the guidance that “vaping is not for young people”. This advice is located in close proximity to advice intended for smoking cessation describing how to start vaping, sharing a website with website with pages such as “What vape should I get?” or “What liquid should I get?” (Health Promotion Agency, 2019).

Prior to this survey, there had already been evidence a subset of young New Zealanders are vaping. The ASH Snapshot Survey, which reviews 20000-30000 Year 10 students annually, found that 3% of Year 10 students were using e-cigarettes daily and a third of students had tried ENDS (ASH - Action for Smokefree 2025, 2019). A phone survey of Taranaki schools in 2019 found nearly all secondary schools sampled had concerns about youth vaping (Kidd J, 2019).

### **2.3 Within Hawke’s Bay**

Hawke’s Bay has 25 schools that cater for secondary school students with a total of around 10000 students in years 9-13 (Ministry of Education, 2021). 48% of all schools in the region are Decile 1-3, indicating significant deprivation in the region (Ministry of Education, 2021). Public Health Nurses with the Hawke’s Bay Child Health Team (HBCHT) are present at all of these schools.

Over recent years, many secondary schools in the region have approached their public health nurse or local health promoter about ENDS use in schools, requesting education for staff and students as well as advice around cessation support. Particular concerns voiced to HBCHT staff were around the school’s role as disciplinarian in suspending of vaping students, the perceived increase in vaping “addicted” students, and the overall impact ENDS had on students’ learning.

A regional working group called SAVE: Stop Adolescents Vaping E-Cigarettes has been established in the last twelve months by a group of multi-disciplinary health and education professionals alarmed at the perceived increase of vaping by children and young people. Their objectives are to develop future



health promotion campaigns at a local level, to advocate for further policy and resources from MOH, and to find or develop best-practice guidelines to support staff working with young people who want to reduce their vaping.

Addressing the issues faced in schools requires a good understanding of these issues. In order to better understand the magnitude and nature of the issues confronting schools the HBCHT has provided schools with a survey tool that enabled them to gather information on the situation within their school. Schools have also agreed to allow the HBCHT to aggregate data to provide the regional overview of ENDS use within Hawke's Bay.

## **3. Methods**

### **3.1 Methodology**

The initial survey was conducted in 2019. Due to the global pandemic of 2020 and the understandable time burden that placed on members of the Public Health team, analysis and distribution of results were delayed. With the passing of the Smokefree Environments and Regulated Products (Vaping) Amendment Act into law following the initial survey a further survey was offered to schools in 2021.

A survey link was provided to schools to be circulated by schools to student groups they wished to include. It was suggested that all year 9-13 students should be offered the opportunity to participate. Participation was voluntary and anonymous. Demographic information was not collected in order to maximise confidentiality of students to improve quantity of responses. Questions asked are detailed in Appendix 1. For the purposes of this report, Year 7-8 data has been excluded from this survey.

### **3.2 Ethics**

A formal ethics review process was not undertaken as the survey tool was provided to schools for them to survey their own students. Consent was provided through voluntary participation in the survey. School-specific data is being shared directly with schools, anonymized where appropriate to ensure no identifying information available to educators.

### **3.3 School Population**

In 2019, we received responses from 12 of 24 secondary schools in the Hawke's Bay region. Overall responses numbered 871, corresponding with a response rate of 8.2% of Year 9 -13 students in Hawke's Bay. The response rate varied considerably by school, with the top three contributing schools providing 89% of responses. One school achieved 50% participation.

The 2021 survey yielded a larger volume of responses with 3124 students completing the survey from 21 schools. Four schools did not participate. The response rate was 29.3% of eligible Year 9-13 students.

As individual student demographics such as gender and ethnicity were not collected, school decile provides a surrogate measure of student socioeconomic status. As shown in the graph below, there was higher engagement from schools in deciles 4-8.

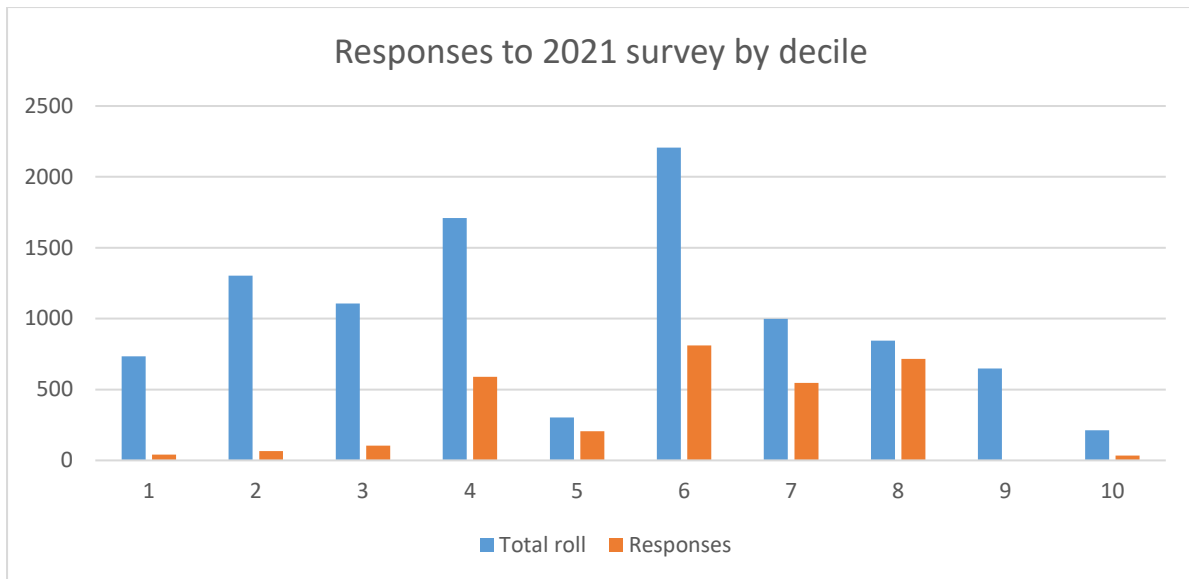


Figure 1: Bar graph showing the number of responses from schools in each decile compared with the total number of students enrolled in schools of each decile within Hawke's Bay. The highest proportion of responses were in schools decile 4-8.

Given the varying range of responses from schools, the decision was made to analyse a subset of schools with high response rates to reduce heterogeneity and the risk of bias. Five schools had response rates above 50% and so were included in the analysis for this report. These schools are decile 4-8. This approach has reduced the generalisability of the study but increased the likelihood that results represent true trends within the included schools. A total of 2591 responses were included in the analysis.

## 4. Results

The following results have been calculated from the subset analysis of schools with a high response rate as outlined above. Smoking refers to traditional tobacco cigarettes.

### 4.1 Smoking and vaping status

Smoking and vaping status was quantified by asking whether a student had used either of these substances in the past seven days. The overall percentage of students surveyed who smoked traditional cigarettes in the last seven days, a substantial decrease from 2019's survey which suggested 11.2% had recently smoked.

Students who reported smoking in last seven days (%) by year level	
Year 9	2.5%
Year 10	4.2%
Year 11	3.2%
Year 12	6.6%
Year 13	8.1%
Total Years 9-13	4.6%

Figure 2: Percentage of 2021 students who reported smoking traditional tobacco cigarettes in the last seven days. An increase is seen as students move towards senior school, peaking in Year 13.

Students who reported vaping in last seven days (%) by year level	
Year 9	7.7%
Year 10	17.2%
Year 11	18.3%
Year 12	28.1%
Year 13	27.1%
Total Years 9-13	18.7%

Figure 3: Percentage of students in 2021 who reported vaping in the last seven days. Around one fifth of students surveyed used a vaping product at least once in the last seven days. This is similar to the 2019 survey figure of 22%.

### 4.2 Correlation between smoking and vaping status

There was significant overlap between vaping and smoking in the last seven days.

Those who had vaped in the last seven days in 2021 were 54 times more likely to smoke than their peers. This effect has grown stronger since 2019, where it was found those who had vaped in the last seven days were 30 times more likely to smoke than their peers. It is unclear whether this is due to similar groups of teens being interested in smoking or vaping or due to one activity leads to the other. No temporal link can be generated from this population association.

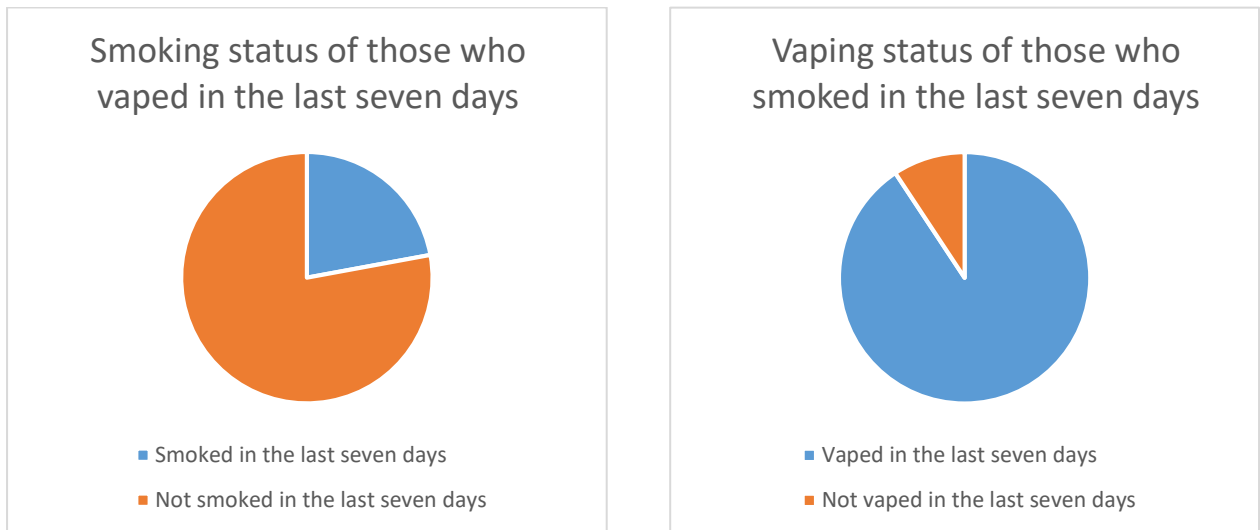


Figure 4: Two pie graphs showing the relationship between vaping and smoking status in the previous seven days. More young people who vape have smoked in the last seven days than the average number of students smoking.

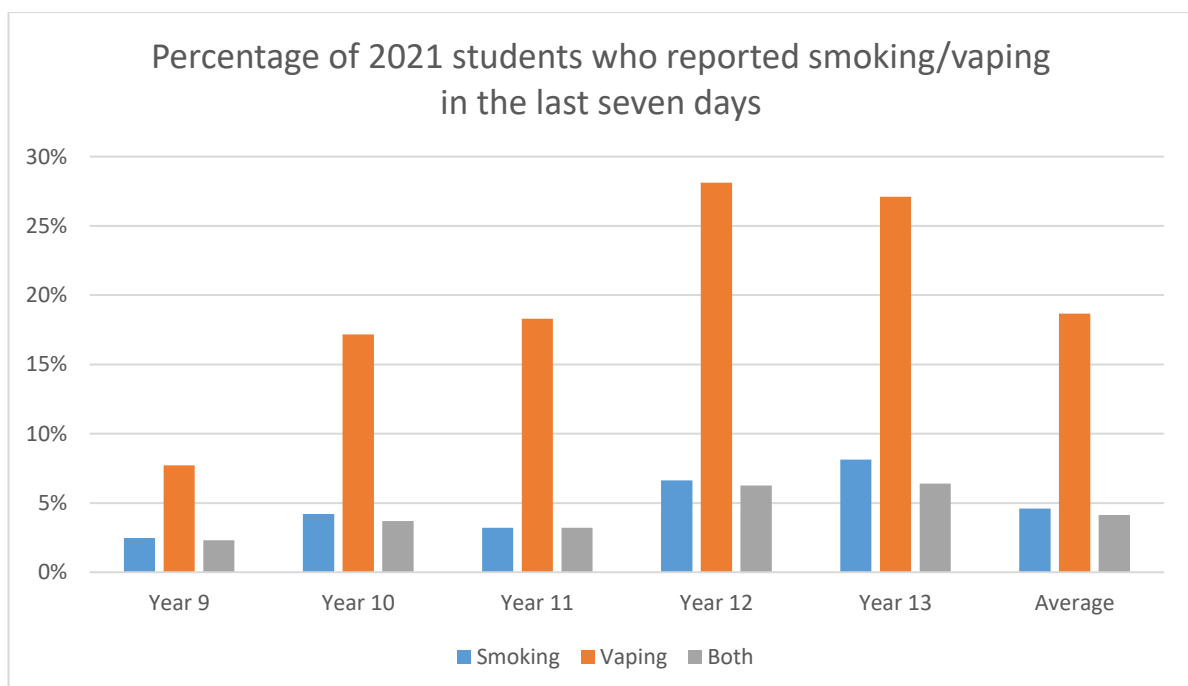


Figure 5: This graph shows the relationship between smoking, vaping and dual use in the previous seven days in surveyed Year 9-13 students. Most young people smoking are also vaping. Vaping is also highlighted here as an issue in its own right with a considerable percentage of young people vaping without recent cigarette exposure.

The survey explicitly asked students to confirm whether ENDS had replaced their use of traditional cigarettes. 46.1% of daily vapers in Year 10 report they had never been a regular smoker of cigarettes.

Smoking status of regular vapers	2019	2021
Vaping has replaced traditional cigarettes	36.1%	21.7%
Now I use vapes as well as traditional cigarettes	29.2%	23.0%
I vape but I have never been a regular smoker of traditional cigarettes	34.7%	55.3%

Figure 6: This table compares the 2019 and 2021 results to a question asking whether vaping had replaced a pre-existing smoking habit. Of those students who vape daily, 55.3% have never been regular smokers, increasing from 34.7% in 2019.

The strong association between cigarette smoking and vaping may capture some people who are using vaping to stop smoking. Vaping Facts, produced by HPA and MOH, advise readers that dual use when weaning from cigarettes “is normal and (it) can take two to three months to be completely off cigarettes” (Health Promotion Agency, 2019). However, continued dual use exposes the young person to the harms of both e-cigarettes and traditional smoking as well as a significant nicotine dose.

### 4.3 Vaping Frequency

Students were asked to quantify how frequently they vape. In 2019, 34.8% of Year 9-13 students surveyed vaped at least once per month and 8.7% were very frequent users (who reported using ENDS at least daily). In 2021, the overall proportion of students who vaped at least once a month is slightly less at 29.9% and usage at least daily has increased to 9.8%. 8.8% of Year 10 students vape at least daily. This proportion is significantly higher than the ASH study’s 2019 report which reported 3% daily usage by Year 10s (ASH - Action for Smokefree 2025, 2019).

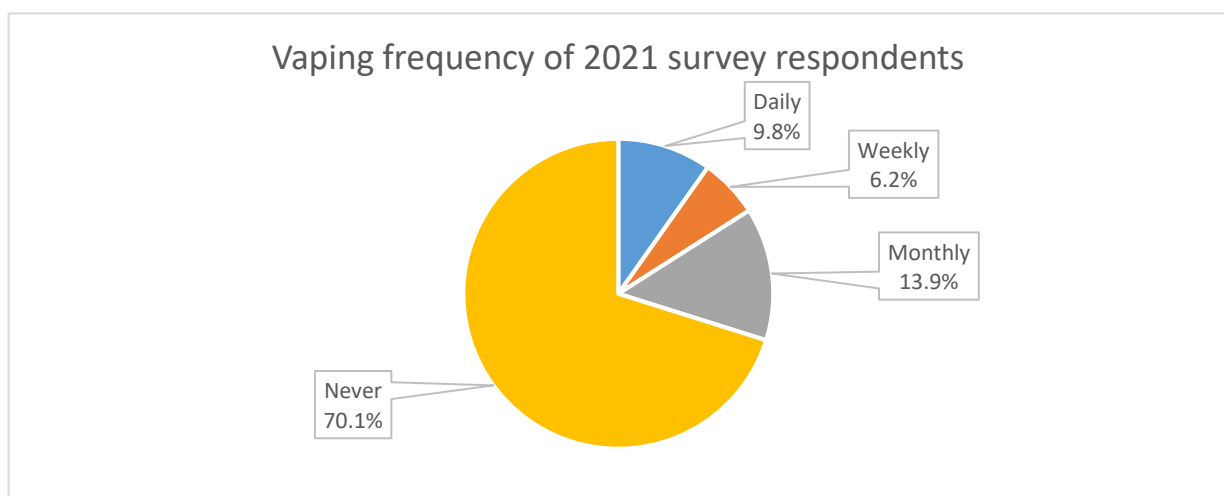


Figure 7: This pie chart visually presents the proportion of students across year levels who report vaping at different frequencies. A total of 29.9% of high school students surveyed are vaping at least monthly.

There is a clear increase in vaping frequency with school year level. Reported vaping frequency in 2021 across Years 9-13 identifies two particular transition points where there is a significant increase in the number of people vaping: between Year 9 and Year 10, and between Year 11 and Year 12. This may suggest areas where intervention could have a strong impact.

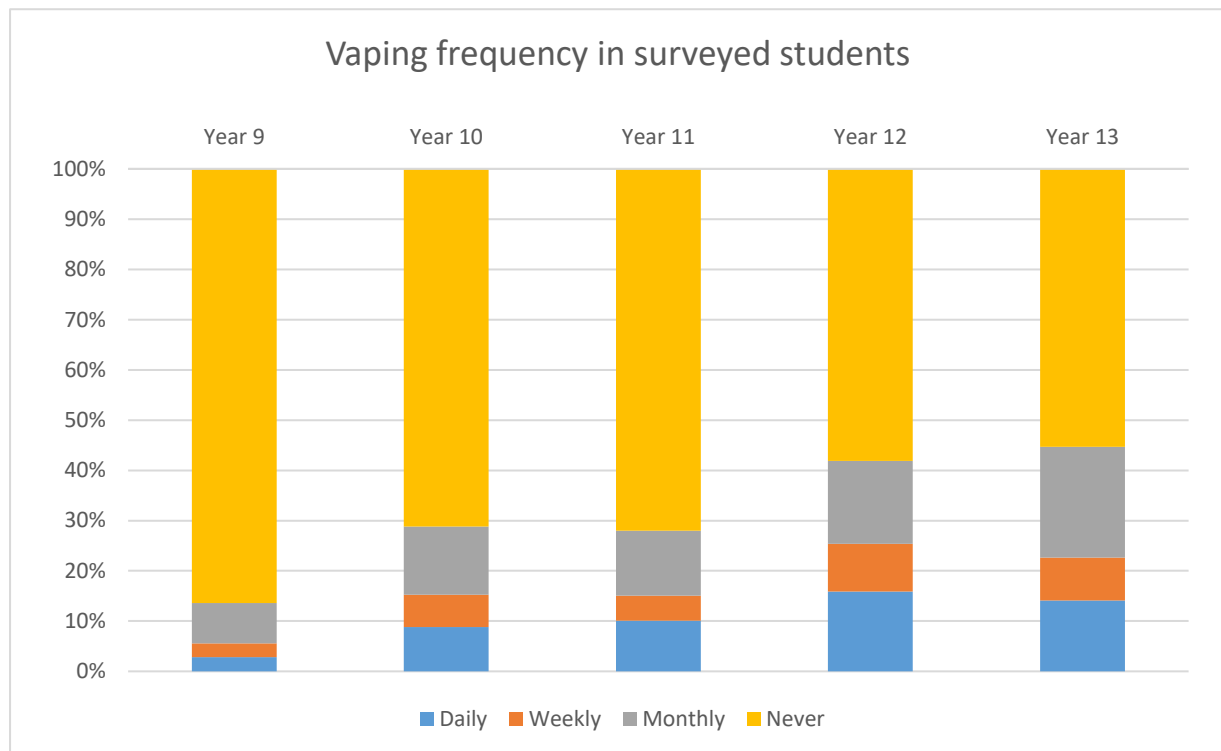


Figure 8: This graph breaks down vaping frequency by year level. 45% of Year 13s surveyed vape at least monthly.

Time to first cigarette is an indicator of nicotine dependence and is associated with greater likelihood of relapse after quit attempts (Branstetter, Muscat, & Mercincavage, 2020). It has been hypothesized that similarly, the length of time between waking up and a person’s first vape may be a marker of addiction. For this reason, time to first vape was recorded to both assess possible impact on learning and provide a surrogate measure of nicotine addiction. 8.1% of daily vapers wake in the night to vape which may represent true nicotine addiction.

Of those who identified as daily ENDS users in 2021, 68.5% of Year 9-13 students who reported vaping daily had their first vape before or during school time, an increase from 57.7% of surveyed students in 2019. Anecdotal reports from school staff that students that are “jittery” without their vape may reflect the 41.5% of daily vapers in Years 9-13 surveyed in 2021 who have their first vape early in the day. The large proportion of students whose first vape of the day was during school hours is particularly concerning as this is likely to impact on the number of hours students can physically be in class, especially as schools are designated smoke- and vape-free zones.

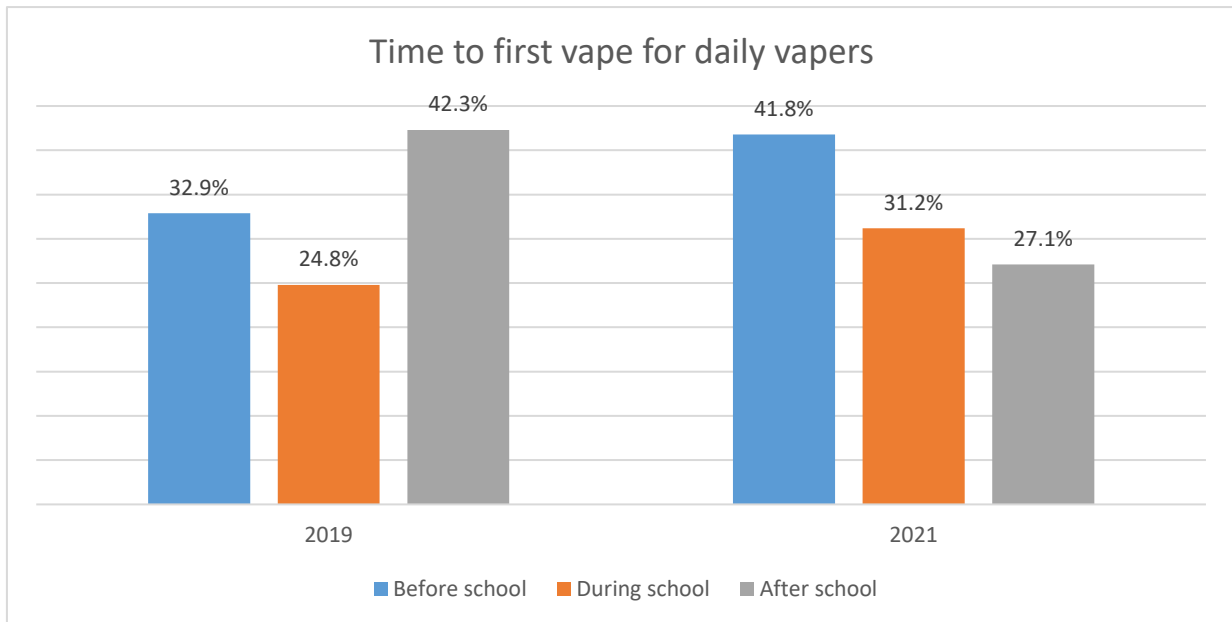


Figure 9: This graph reports on what time of day students who report vaping daily have their first vape. Since the 2019 survey, there has been an increase in the proportion of students who vape earlier in the day.

#### 4.4 Source of ENDS

Students were asked where they got their ENDS from. In the 2021 survey, an option for “street supplier” was added due to concern from schools about street supply of vaping products. For this reason, comparisons cannot be directly made between 2019 and 2021.

Locations where students reported obtaining ENDS from	
Location	Number of students
From internet	16
From family	113
From friends	532
From retailers	93
Street suppliers	46

Figure 10: The number of students who reported obtaining vape materials from each location. It was possible to select multiple options. No definitions were given to those answering the survey so interpretation of these labels was left to respondents.

By far the largest ‘supplier’ of ENDS to students is “friends”. This undefined label may not just apply to other secondary school students, but also over-18 friends or acquaintances who might supply underage students with vaping equipment and liquids. 93 students in the 2021 survey reported buying ENDS from retailers, despite sale to those under 18 being restricted. This is even across year groups,



without a spike in Year 13, suggesting this is a true representation of illegal purchase rather than a swell of 18-year-old students legally obtaining vaping products.

#### **4.5 Nicotine Quantity**

As vaping liquids may contain differing doses of nicotine, students were asked what concentration of product they are most frequently using. Definitive measurements of how much nicotine is in the ENDS being used is extremely difficult. Two users with similar liquid concentrations may differ in delivered dosage based on device, frequency and duration of vaping episodes. Data is unable to be interpreted for this section of the survey as nicotine strength was left undefined and data on duration of vaping episodes was not collected.

The 2021 addition of an “unsure” option for nicotine strength has produced the observation that 35.8% of students surveyed were unsure how much nicotine was in their vape. Possible reasons for this include young people being less aware of nicotine content due to age and education level or vapes being shared amongst students. This is similar to nicotine unawareness documented in other countries; in the United States, approximately two-thirds of studied JUUL users (a brand of ENDS) were not aware that their product contained nicotine (Centers for Disease Control and Prevention, 2021).

#### **4.6 Changes to Vaping Habits and Attitudes**

An addition to the 2021 survey was made to capture information specific to students’ change in vaping habits and their attitudes toward vaping.

Over the last twelve months:

- 9.3% of students surveyed reported starting vaping.
- 10.0% of students reported vaping more frequently.
- 15.4% of students report their vaping habits to be very similar to this time last year.
- 7.2% of students reported vaping less frequently.
- 2.7% of students are vaping at lower doses of nicotine than this time last year.
- 6.2% report vaping at a higher dose of nicotine than last year.

Students were also asked a series of questions related to perceived harms from vaping.

4.0% of Year 9-13 students reported they have been in trouble at school due to vaping. A similar proportion (4.7%) have been in trouble at home due to vaping. 1.7% of students in Years 9-13 agreed with the statement “my education has been affected by my vaping/I have missed class time because

of vaping”. 11.0% of survey respondents are “happy” with the amount they vape and the concentration of nicotine they are using.

161 respondents (a third of those who have vaped in the last seven days) had tried to reduce their vaping in the last twelve months. Despite the quantity of students who are looking to reduce their use, only 8.7% of these students actively looking to decrease their intake reported seeking out support online or in-person for cessation resources. This may be due to lack of perceived assistance available, lack of awareness of current supports for youth or fear of repercussions from school officials.

#### **4.7 Limitations**

As an informal survey, this data has some significant limitations. Instrument design has meant some sections have been unable to be analysed due to lack of clear definitions of terms used. Although the survey was anonymous, some students may have been unwilling to participate if they felt that they could be identified or if their responses might get them “into trouble.” This may have been heightened by schools being the distributor of the survey.

School participation was voluntary with a variety of school engagement and survey promotion. Schools who perceived higher issues with vaping may have been more proactive in their support for this survey. It is unclear what effect that has had on the generalisability of this survey.

Both the 2019 and 2021 surveys’ response-adjusted decile was higher than the average decile in the Hawke’s Bay region. It is unclear how this has affected the sample data, whether vaping has been over- or under-represented by the overrepresentation of higher decile schools.

Further research should include the ethnicity of participants. Smoking disproportionately affects Māori young people, with the daily smoking rate for year 10 Māori students in 2019 being 5.9%, five times higher than the 1.0% reported for Non-Māori non-Pacific (ASH, 2019). The greater participation from students in higher decile schools suggests vape use may currently have a different pattern to smoking. However further research is required to understand any variation and its implications.

As a sample of Hawke’s Bay secondary schools, this data gives some insights into current vaping habits of Year 9-13 students in the analysed schools. It is unclear how applicable these trends are to students across Hawke’s Bay generally or nationwide.

## 5. Key Conclusions

**1. Despite the MOH messaging that “vaping is not for young people”, a significant proportion of Year 9-13 students who responded to this survey are currently vaping.**

*9.8% of 2021 respondents vape daily and 18.7% have vaped at least once in the last seven days. This is significantly more than currently smoke (4.6%).*

**2. Daily vaping among Year 10 students is much more common in selected Hawke’s Bay schools than the ASH survey suggests.**

*8.8% of Year 10s vape daily, more than twice the Year 10 vaping rate reported by ASH in 2019. There are some methodological differences between this informal survey and that conducted annually by ASH which may account for some of this discrepancy, but the lingering question here is whether Hawke’s Bay has an epidemic of youth vaping compared to the rest of the country.*

**3. A high proportion of young people who vape have never been regular smokers.**

*Despite the promotion of vaping as a smoking cessation tool, this report confirms a large number of Hawke’s Bay students who have never smoked are starting to vape daily and are being exposed to the risks associated with nicotine and other inhaled substances.*

**4. A significant proportion of students were not aware how much nicotine is in their vape product.**

*This may be due to the informal nature of sharing a vape, lack of health literacy or the use of home-made nicotine liquids. This may be a useful target for education of young vapers.*

**5. Despite new legislation, young people report obtaining vaping products from retailers and street suppliers.**

*This information may support further enforcement of the recent SERPA legislation.*

**6. A proportion of our young people who are vaping are looking to cut down – and we need to be ready to support them.**

*Very few reached out to people who may support them in this process. Our HBCHT, educators, and other health professionals working with young people need clear information to aid their work in this area. This may include educational resources, further health promotion activities, nicotine replacement guidelines and more.*

### **5.1 Next Steps**

- A larger national survey is being performed by Te Hā Ora: Asthma and Respiratory Foundation NZ to be released in Nov 2021. We await the publications of their findings so we can confirm whether our issue is local to Hawke's Bay or if other regions are in similar situations.
- We await national guidance on suggested vaping cessation strategies.
- Quantifying harms to education further by determining the frequency of stand-downs, suspensions and exclusions due to vaping.
- With SERPA is coming into force, full details of enforcement plans and consequences for retailers who serve children with vape products will become apparent in the coming months.

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## APPENDIX 2: Survey Questions

### 2019

1. Which school do you go to?
2. Which year group are you in?
3. Have you smoked one or more traditional cigarettes in the last 7 days?
4. Have you vaped (e-cigarettes) in the last 7 days?
5. If you use e-cigarettes / vape regularly, do you vape nicotine products?
  - a. Usually vape nicotine at low doses (less than 5 mg/mL)
  - b. Usually vape nicotine at high dose (above 10 mg/mL)
  - c. Usually vape nicotine at medium doses (5-10 mg/mL)
  - d. Don't vape regularly
  - e. Don't vape nicotine products
6. How often do you use vape products (e-cigarettes)?
  - a. Several times a day
  - b. Daily
  - c. Weekly
  - d. Monthly
  - e. Never
7. If you use vapes or e-cigarettes on a daily basis, what time of day do you usually have your first vape?
  - a. Wake in the night to vape
  - b. Before Breakfast
  - c. Before school
  - d. During the morning
  - e. Middle of the day
  - f. During the afternoon
  - g. In the evening
8. If you are a regular user of vapes or e-cigarettes, have they replaced traditional cigarettes?
  - a. I vape but I have never been a regular smoker of traditional cigarettes
  - b. Now I use vapes as well as traditional cigarettes
  - c. Vaping has replaced traditional cigarettes
  - d. Not a regular user of vapes
9. If you have vaped, where do you get your vape supplies from?
  - a. From family?
  - b. From friends
  - c. From shops/retail outlets
  - d. From internet suppliers
  - e. Other (write in field)

### 2021

1. What year group are you in?
2. What school do you go to?
3. Have you smoked one or more traditional cigarettes in the last 7 days?
4. Have you vaped (e-cigarettes) in the last 7 days?
5. If you have vaped, where do you get your vape supplies from? You can tick multiple answers.

- a. From family?
  - b. From friends
  - c. From shops/retail outlets
  - d. From internet suppliers
  - e. From a "street seller" over 18
6. Thinking about the last time that you vaped – how much nicotine was in the vape?
- a. Low dose nicotine
  - b. Medium dose nicotine
  - c. High dose nicotine
  - d. Don't vape regularly
  - e. Zero-nicotine
7. How often do you use vape products (e-cigarettes)?
- a. Several times a day
  - b. Daily
  - c. Weekly
  - d. Monthly
  - e. Never
8. If you use vapes or e-cigarettes on a daily basis, what time of day do you usually have your first vape?
- a. Wake in the night to vape
  - b. Before Breakfast
  - c. Before school
  - d. During the morning
  - e. Middle of the day
  - f. During the afternoon
  - g. In the evening
9. If you are a regular user of vapes or e-cigarettes, have they replaced traditional cigarettes?
- a. I vape but I have never been a regular smoker of traditional cigarettes
  - b. Now I use vapes as well as traditional cigarettes
  - c. Vaping has replaced traditional cigarettes
  - d. Not a regular user of vapes
10. Compared to this time last year, which of these statement is true? You can tick multiple boxes.
- a. I have started vaping since this time last year.
  - b. I am vaping at higher doses of nicotine than this time last year.
  - c. My vaping habits are very similar to this time last year.
  - d. I am vaping less frequently than this time last year.
  - e. I am vaping at lower doses of nicotine than this time last year.
  - f. I have given up vaping in the last year.
  - g. None of the above.
11. If you have vaped, where do you get your vape supplies from? You can tick multiple answers.
- a. From family members
  - b. From friends
  - c. From shops / retail outlets
  - d. From internet suppliers
  - e. From a "street" supplier aged over 18



12. Which of the following statements are true about your vaping habits? You can tick multiple boxes

- a. I have got into trouble at school because of vaping.
- b. I have got into trouble at home because of vaping.
- c. My education has been affected by my vaping / I have missed class time because of vaping.
- d. I am happy with the amount that I vape and the concentration of nicotine.
- e. I have tried to reduce my vaping.
- f. I have tried to reduce the concentration of nicotine that I am vaping.
- g. I have sought help regarding my vaping (e.g. from a teacher, counsellor, 1737, Public Health Nurse, etc.)
- h. I rarely think about my vaping.